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Leather Craft in Marrakech: An Anthropological Analysis
Between Present Challenges and Past Legacies

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Introduction

Since thousands of years leather has been crafted by humans across the world and remains a material of enduring significance with diverse properties and versatile usage. In particular Moroccan leather craft constitutes a centuries-old cultural heritage that continues to be practiced today. In cities such as Fèz and Marrakech, the craft is an integral part of the urban landscapes of the old medinas. Most of the studies focusing on Moroccan leather craft has concentrated on the tanneries of Fèz and has rarely taken into consideration or integrated a socio-cultural perspective (see e.g. Escher and Wirth 1992; Arhouné et al. 2021; Saad and Youness 2024). To date only one ethnographic in-depth study exists that examined this craft in the Eastern part of Marrakech's old town. Influenced by French anthropological traditions of the 1950s/60s, the Algerian ethnologist Danièle Jemma-Gouzon carried out her doctoral research among the tanners of Marrakech. She documented their craft practices and lives in a very detailed manner and connected it with symbolic interpretations. The insights and results were made accessible to both the academic community and a wider public in her ethnography *Les Tanneurs de Marrakech* (1971), a shortened version of her dissertation which was published in 1969 to obtain her doctorate at the University of Montpellier, France. The presented anthropological study¹ in this thesis engages closely with D. Jemma-Gouzon's ethnography. It asks which continuities and changes in Marrakech's leather craft can be identified in comparison with her study. To address this question, the research applies an ethnographic, temporal comparison based on empirical data collected by the author during fieldwork in 2023/24 and analyzed through the methodological framework of the *chaîne opératoire* (or operational sequence), an approach already applied by D. Jemma-Gouzon. Moreover, the comparison is further complemented by historical sources – including historiographies, photographs, and maps spanning from the 13th to the 20th century – and to some extent by archaeological data as well. The aim is to show that the leather craft exists within a dynamic tension between historical traditions and

¹ The master thesis covers mainly the anthropological part of the interdisciplinary research project “*dbagh*” which aims to examine the leather craft of Marrakech from an archaeological and anthropological perspective under the direction of Thomas Reitmaier (University of Zurich, Archaeological Service of Graubünden, Switzerland) in collaboration with the Moroccan archaeologist Abdallah Fili (Université Chouaib Doukkali, El-Jadida, Morocco). It is partly funded by the Swiss-Liechtenstein Foundation for Archaeological Research Abroad (SLSA) and private resources. A research permit for the anthropological study was obtained from Moroccan authorities with the support of the Austrian Embassy in Rabat, Morocco.

contemporary modernity. On the one hand, continuities persist, grounded in long-established craft traditions and the preservation of specific technologies, skills and materials. On the other hand, the study demonstrates that this “traditional” craft which is often labeled by scholars as “ancient” has been in constant change, shaped by diverse influences and developments over time. The thesis is theoretically positioned within the material culture studies and the anthropology of technology but intended to contribute towards an anthropology of crafts whose existence is marginal within socio-cultural anthropology (see Greiner and Pröpper 2016). Hence, the theoretical premises of the technological and economic dimension are inspired by the work of French anthropologist P. Lemonnier and his book *Elements of an Anthropology of Technology* (1992) to show that the phenomenon of leather craft is embedded in a wider social, cultural and economic context. The second influence on the theoretical premises derives from concepts of the anthropology of the body and work, for which specifically the theoretical work of British social anthropologist T. H. J. Marchand plays a major role. Regarding the methodological background, a preliminary study was carried out in Marrakech in September 2023 to gain field access and first insights into leather craft for further research organization. This was followed by a longer field stay in February and March 2024, during which additionally the influences of the Islamic fasting month *Ramaḍān* could be experienced and observed among the tanners. Another short field stay in July 2024 made it possible to complement the so far collected empirical data and to ensure that seasonal influences on leather craft could be fully documented. Applied ethnographic methods for all three research stays have been intensive participant observation, conducting (informal) conversations and in the further course semi-structured interviews². In addition, the leather craft as well as the daily life among tanners was documented with ethnographic drawings, photographs and short video sequences³. From the beginning it was decided to focus primarily, but not entirely, on one small-scale tannery in which all steps of crafting goat, sheep and cattle leather are observable. For the preliminary study and the first week of the field stay in February/March 2024 there was a work collaboration with the Moroccan translator Hicham Rafik to provide linguistic support and facilitate entry into the field. The cooperation with Mr. Rafik had the advantage that the research intentions as well as the procedure could be communicated transparently to the tanners.

² A list of interviews recorded during the fieldwork is provided in Appendix B.

³ All participants in this research were informed about the further use of field data and gave their verbal consent for the recording of conversations/interviews as well as for photographs and videos.

Moreover, through working together it was possible to expand the researcher's language skills of Moroccan Arabic (*darīja*) as well as knowledge of everyday life in the medina and an understanding of Moroccan culture in general. In the further course, the communication between the tanners and the researcher was mainly based on a mix of languages including English, French and basic *darīja*, a language diversity that is as well reflected in this master thesis. Historical information derives from literature, archive, and database research, whereby it is important to mention that the research was carried out primarily in European archives and databases. The reasons for this are, on the one hand, that attempts to gain access to the only national *Archives du Maroc* failed due to unanswered requests and, on the other hand, a lack of Arabic language skills of the researcher to read (historic) Arabic sources. Nevertheless, the referred historical sources in this thesis should help to provide a historical context and to reconstruct some aspects of leather craft in precolonial times, thus making the influences of the former French protectorate (1912–1956) more visible. During the field research in February/March 2024 the opportunity arose to meet the Algerian ethnologist D. Jemma-Gouzon for a biographic interview in Marrakech. The insights in her life and work as ethnologist gained through the interview and a detailed overview of her ethnography of 1971 form the first chapter of this MA thesis. It is followed by a chapter on historical contexts of leather craft in Marrakech including the Almoravid, Almohad and 'Alawi dynasties, the French protectorate period and key developments after independence in 1956. The thesis' main part is ethnographic in nature and starts with outlining the theoretical and methodological premises. It is followed by insights into today's situation among the tanners of Marrakech in comparison with some aspects of D. Jemma-Gouzon's context information on the tanners' lives in the 1960s. Afterwards, a detailed comparison of crafting goat, sheep and cattle leather is provided by contrasting information compiled in both *chaîne opératoires*. This approach makes visible the continuities and changes within Marrakech's leather craft to gain a better understanding of the way in which this craft exists in a dynamic tension between tradition and modernity. For the transliteration and transcription of the vernacular version of urban Moroccan Arabic used in Marrakech, this text basically relies on the relevant IJMES transliteration conventions. Where local and regional toponyms or historical periods and dynasties are concerned, preference is given to standardized Francophone conventions. I thank Sara Fatihi (Department of Near Eastern Studies, University of Vienna) for her collegial assistance in these matters.

The Life and Work of (Maryam) Danièle Jemma-Gouzon

“J’eus l’ambition de vouloir pénétrer de plain-pied dans ce domaine que je pressentais comme étonnamment complexe et don’t j’ai mal su témoigner de la richesse. J’échouai d’abord. Je compris alors qu’il me fallait être moins impatiente.” (Jemma 1971, 5). This text passage is a short reflection on the field experience among Marrakech’s tanners written in the introduction of (Maryam) Danièle Jemma-Gouzon’s first ethnography. It is based on her doctoral thesis *Éléments d’approche de la organisation sociale et rituelle d’une cité traditionnelle (Les Tanneurs de Marrakech)* (1969) to obtain her doctorate in sociology, specialized in ethnology at the University of Montpellier, France in June 1969. The present chapter aims at shedding more light on the biography of D. Jemma-Gouzon (henceforth referred to by her maiden name “Jemma”) and research achievements as well as on the context of her research among the tanners in the 1960s. Additionally, this section includes a short analysis of an ethnographic film produced during her second field stay. The chapter’s final part consists of a summary and analysis of the above-mentioned ethnography to explain the ways in which it is used in this MA thesis. During my field stay of February/March 2024 the opportunity⁴ arose to meet the 82-years old Algerian ethnologist⁵ at her daughter’s home in Marrakech where she recovered from a surgery. It was the first day of *Ramaḍān* in 2024 when I sat in a taxi on my way to the outskirts of Marrakech to meet this lady who would turn out to be a most impressive woman. The first part in our conversation⁶ of more than two hours was kept very open and gave Jemma the possibility to speak about her life in general while I was curious about the development of her interests in ethnology. The second part of the conversation focused on finding out more about the circumstances of her research among the tanners. How did she gain access to the field? Which methods have been applied? And how was her experience as a female researcher in a male-dominated field? Moreover, I brought photographs and videos of the tanneries from my own fieldwork and from the ongoing excavation of the mill. The intention was to offer some general insights into the project as well as to discuss together changes and continuities over the last dec-

⁴ Special thanks to Ahmed Skounti for establishing the contact with D. Jemma-Gouzon.

⁵ Jemma-Gouzon designates herself as ethnologist, hence the author applies the same term. For this thesis section the discipline’s name “ethnology” is used as equivalent to “anthropology”.

⁶ D. Jemma-Gouzon gave her verbal permission to record the conversation. The recording file excludes talks at the beginning of the visit and during *iftar*, as it was more of a personal atmosphere. The communication was mainly based on English mixed with French. Due to her health condition, a photo was omitted.

ades which are pointed out in this MA thesis' main part. After arriving at the apartment and introducing ourselves we sat together in the living room. While I was preparing my notebook and interview recorder a woman, who supports the ethnologist with the household, kindly served us tea and Moroccan cookies. After chatting about fasting in *Ramaḍān*, her family and current health condition, Jemma began to tell me about her life.

Insights into the Life of an Ethnologist

Jemma was born 1943 in Constantine, Algeria where her grandparents had settled after their emigration from France. The whole family is Christian, but Jemma became a Moslem a few decades afterwards. This part of the story is going to be told later. Jemma's parents, her sister and other relatives were born in Algeria as well, a country which was under French colonial rule from 1830 to 1962. Within the society existed an intentionally strong segregation between the colonial settler population (*colons*), mainly French, and indigenous population of Algeria (*indigènes*) consisting of various ethnic groups with different religious affiliations (Naylor 2015, 13–16), mainly speakers of Arabic or “Berber” languages. This social segregation becomes obvious in the self-designation “*piets-noirs*” used by the colonial population to distinguish themselves from the rest of Algerians (Lefeuvre 2004, 267). It also shows in the fact that Jemma, belonging to the French-speaking population of Algeria, neither learned Arabic nor any dialects of the Imazighen during her childhood. Following a long freedom struggle, the country became independent in 1962. However, it continued to face a lot of difficulties in the process of forming a state and national identity. One relevant example are the riots (known as “Berber Spring”) of the Imazighen population resulting from the government's Arabization attempts of the 1980s. Another case in point is the civil war in the 1990s, ongoing until the 2000s (Naylor 2015, 29; xlv–xlv). Jemma was eleven years old as the war of independence (1954–1962)⁷ broke out. Growing up in a country under colonial rule within an extremely divided society and experiencing the rise and tensions of a violent conflict had a long-lasting impact on Jemma's choice of profession. Already as a teenager she was interested in ethnological literature. This may be interpreted as an unconscious act for a better understanding of events and processes in the world around her. When she was an 18-

⁷ For further information on the war of independence see Stora and Harbi 2004, for a short summary see Naylor 2015, 18–24.

year-old young woman Jemma left Algeria together with her family to seek refuge in France, a country which she has never seen before. About her native country she said: “At the time I left, I realized that I was born there. My father, my mother, my grandparents were born there. And I realized that I did not know. I didn't know nothing about the population!” (Appendix A, Part II, 00:45:40, p. 165-66). Shortly before the family's departure to France they went to Constantine for saying farewell to her grandparents. During this visit Jemma made the promise to return to Algeria for pursuing an understanding, or as she emphasized in her own words: “I wanted to understand, [...]. My parents didn't understand, my grandparents didn't understand. [...] Just two populations with no understanding, nothing. I just wanted to understand it!” (Appendix A, Part II, 00:45:40, p.165-66).

Jemma kept her promise and went back to Algeria to work at the *Centre de Recherche Anthropologiques, Préhistoriques et Ethnographiques* (CRAPE)⁸ located in the capital city Algiers in 1970. Back in Algeria Jemma conducted fieldwork in various regions among different ethnic groups until 1986. Noteworthy is her research among the *Kel Ahaggar*⁹ this is a Tuareg¹⁰ confederation inhabiting the area around the mountain *Ahaggar* (or *Hoggar*) in the Central Sahara in Southern Algeria (Kohl and Fischer 2010, 3–5). During *iftar*, the meal eaten in *Ramaḍān* after sunset, the ethnologist told this author about her biggest dream, namely to participate in the Tuareg salt caravan known as *Azalai*. Yet that dream did not turn into reality. Nevertheless, an outstanding achievement is that the ethnologist lived for longer periods together with families of the *Kel Ahaggar* in their mountainous desert. She studied and documented everyday life, kinship structures, material culture, especially the handcrafted jewelry, and alliances with neighboring groups (see Jemma 1972). After Jemma's research among the Tuareg she travelled with her second husband to Niger and Benin (formerly known as Dahomey) for a few months. This followed her move to Northeastern Algeria, where she conducted fieldwork in the mountain range *l'Aurès* (or *Awrās*) for several times over a period of eight years. The area is rich in history from the Neolithic period until modern times (see Yver 2012). The results have been published in the

⁸ During the French colonial period the *Centre Algérien de Recherches Anthropologiques, Préhistoriques et Ethnographiques* (CARAPE) was established in 1955. After independence it was renamed as *Centre de Recherche Anthropologiques, Préhistoriques et Ethnographiques* (CRAPE) and still exists today as *Centre National de Recherches Préhistoriques, Anthropologiques et Historiques* (CNRPAH). See <https://www.cnrpah.org/> (accessed 2025-01-17)

⁹ For further information on the Tuareg society and in specific about the *Kel Ahaggar* see Fischer and Kohl 2010.

¹⁰ The self-designation of Algerian Tuareg is “*Imuhaɹ*” (sing. m. “*Amahaɹ*”/sing. f. “*Tamahaq*”) (Fischer 2010, 22).

monograph *Villages de l'Aurès. Archives de pierres* (1989a). During this time, she was affiliated with the *Centre universitaire de recherche, d'études et de réalisations* (CURER) at the University in Constantine where she gave courses as well. For her fieldwork in the l'Aurès Jemma mainly stayed in and studied the village Beni Souik. The name of the village derives from the tribal branch to which the villagers belong. It is in a valley south of the central massive populated mainly by the Imazighen-group known as *Chaouia* (or pl. *Shāwiya*/sing. *Shāwi*) (Jemma-Gouzon 1989a, 42; cf. Colin, Lancaster, and Jastrow 2012). That valley was an important contact zone between the sedentary inhabitants of the mountain range and nomadic groups of the plains in the South (Jemma-Gouzon 1989a, 42–59). The ethnologist conducted an in-depth study of the group's relationship to its various inhabited spaces (e.g. villages, neighborhoods, houses), defined as “*archives de pierre et de terre*” (Jemma-Gouzon 1989a, 8), which were (trans-)formed by environmental, social, economic, cultural and historical influences. The aim of the ethnography is to contribute to the heritage of the l'Aurès and its inhabitants, and, to prove that throughout history this area was an important contact zone between sedentary and nomadic groups (Jemma-Gouzon 1989a, 7–9; 21; cf. Naylor 2015, 100). Another book by Jemma by the title *L'Algérie. A la Croisée des Temps* (1989b) was published in the same year. It is a tribute to the multifaceted identities, cultures and history of Algeria's rural population rather than an ethnographic monograph. The book gives insights into people's lives through stories, poems and photographic documentation in combination with ethnographic and historical information. The book has a strong emphasis on the perspectives of Algerian women and their spaces as well as on the colonial history of rural areas (see Jemma-Gouzon 1989b). One methodological continuity in Jemma's research is her emphasis on visual anthropology. Already during her work among Marrakech's tanners, she applied visual anthropology complementary to other methods. She used photography, filming, and the often-underestimated methods of drawing and sketching to visualize and analyze her fields of study. But this aspect of the ethnologist's work is discussed in more detail in the next section.

A turning point in Jemma's life and career was moving with her second husband to the coastal city Jeddah, Saudi Arabia after almost twenty years in Algeria. The ethnologist was married twice. During her fieldwork in Marrakech she had met her first husband, who came from Aït Bouguemez, Morocco and with whom she got her daughter in 1967. Later on, she met and married her second husband who worked as

civil engineer and passed away in 2022. Due to the profession of her second husband the couple moved to Jeddah. This meant for Jemma that she could no longer practice her profession. As a woman she was not allowed to work at a Saudi Arabian university back then. Nevertheless, Jemma described her years in Jeddah as wonderful. For her it was an interesting place to live. Located at the coast of the Red Sea, she and her husband were passionate sailors. As a city, Jeddah is rich in history, being a cultural hub as the main nexus for the Islamic pilgrimage *Hajj* to Mecca and Madīnah.

In 1990 her husband got a post in Karachi, the provincial capital of Sindh in Pakistan to where the couple moved for two years. In 1991 Jemma decided to convert to Islam entering a *tariqa* order of Sufism and adopting the Muslim name Maryam¹¹. In conversation with the author she mentioned that this life turn was completely unexpected as she was born and raised in a Christian family. And even though the ethnologist lived mainly in Islamic countries, she never spent deeper thoughts on converting to Islam before 1991. But after a life-threatening experience with the sailing boat on the open sea and her spiritual encounters in Pakistan, she changed her mind and found her faith. Because of political instability in the province of Sindh (Burki 2015, 511–13), the couple had to leave Pakistan and went back to France. After a while her husband again got a post in Jeddah, so they moved for a second time to Saudi Arabia. Together with her husband, who embraced Islam a few months after Jemma, she performed the *Hajj* to Mecca, one of the five pillars of Islam. The couple decided to live in Mecca, then moved to Madīnah where they settled for a while. For Jemma this city was full of spiritual light and a place where she loved to live. This made it even more tragic that the couple had to go back again to France, or as she expressed: “[...] it broke our hearts this time.” (Appendix A, Part I, 00:33:36, p.164-65).

In 2012 the couple decided to move from France to Marrakech, where Jemma entered again a *ṭariqa* Sufi order. Meanwhile the ethnologist has settled in the Moroccan “city of roses”, known as Kelâat M’Gouna, where she has been spending her remaining years closer to her daughter and grandchildren. During the author’s visit this woman gave quite an energized impression, being full of life even though she just recovered from surgery. This energy is also reflected in her ongoing activities. Still

¹¹ It is the Arabic form of the name Mary. From an Islamic as well as Christian perspective it refers to the mother of Jesus. Maryam is the only women who is mentioned by name in the *Qur’ān* and to whom a complete *Sūrah*, the 19th with 98 verses, is dedicated (cf. Wensinck and Johnstone 2012; Qur’an 2010, 19:1-98).

identifying as an ethnologist and with her profound expertise, she works currently together with the Moroccan NGO “We Speak Citizen”¹². The NGO founded the cultural center and research institution *Maison de l’oralité*, located in the UNESCO World Heritage site Aït Ben Haddou¹³. It has the aim to preserve the oral and cultural traditions of Moroccan Imazighen, especially from the southern regions. Jemma developed a more personal interest in Imazighen jewelry during her research in Morocco in the 1960s. Over the last decades she collected “ethnic” jewelry, studied it intensively and even ran a jewelry business during her first time in Saudi Arabia. At the time of the author’s visit Jemma was actively engaged in the creation of a new exhibition. Opened in October 2024 it displays objects from her private collection at the cultural center in Aït Ben Haddou. Before enjoying together the first *iftar* of *Ramaḍān*, Jemma told me that she is very pleased because her collection has finally found its destination.

The Context of Jemma’s Research among Marrakech’s Tanners

After the arrival of her family in France, the ethnologist started to study at the University of Montpellier in 1961. The last year before she began the doctorate at the *Faculté de Lettres et Sciences Humaines* she decided to take an Arabic course and got the opportunity to participate in a 2-month journey through Morocco. This trip laid the foundation for the ethnologist’s research among Marrakech’s tanners. She spent a few days in the city, visited the tannery quarter *Bāb Dbbāgh* and made acquaintance with a *mrrakshyia*¹⁴. This lady supported the ethnologist in her subsequent research attempts, which was not always to Jemma’s advantage. In total there were two seasons of her fieldwork among the tanners: the first started in April 1965 for a few months and the second one in autumn 1966 to the end of the same year. During the field stays Jemma was guest in the *riād* (old Moroccan house) of the *mrrakshyia*. After the ethnologist told her about the plan to conduct research among the tanners on her own, the lady was not amused. The reason was the *mrrakshyia*’s perspective on the low social status of the tanners within the Moroccan society. She insisted that the ethnologist needed to be accompanied by her driver Mohammed Aityoussef. This

¹² For further information about the NGO and its latest activities see https://www.instagram.com/we_speak_citizen?igsh=MXgxajlydHE4enE4dg== (accessed 2025-02-03).

¹³ The Ksar of Aït Ben Haddou is besides eight other sites in Morocco UNESCO World Heritage. See <https://whc.unesco.org/en/list/444> (accessed 2025-02-10).

¹⁴ Term in *darīja* for a woman who comes from, and/or lives in Marrakech.

contradicted with Jemma's perception. On the other hand, refusing the host's objection would have meant denying the women's hospitality, which could have turned into a disadvantage. However, the ethnologist accepted and spent most of the time together with Aityoussef in the field. During the conversation Jemma remarked that she never felt unsafe or not welcome as an outside woman in the tanneries. Being well accepted among the tanners shows also the following anecdote out of her first ethnography:

“Un jour, peu après le maghreb, l'un des maîtres tanneurs vint me chercher dans l'un des ateliers de corroyage où j'enquêtais. Il me dit: << Viens, souvent nous nous réunissons, nous les patrons et quelques vieux ouvriers au fonduq takkut; les apprentis ne peuvent y pénétrer. Dans fonduq takkut reside l'âme subtile (er-ruh) de la peau et des tanneurs >>.” (Jemma 1971, 5)

Besides, the ethnologist was asked if she ever saw women working in tanneries or if she engaged with tanners' wives and families. She could not remember exactly considering it was more than 60 years ago. Jemma just mentioned that she never saw women working inside a tannery, but it could have been the case that they carried out specific work steps of leather production (e.g. grinding of materials) at home.

Almost nothing is noted regarding the methodic approach of Jemma's research, neither in her doctoral thesis nor in the published version. Hence the author was curious to find out more during the second part of the conversation. In general Jemma applied classic anthropological methods such as participant observation and conducting interviews/conversations with the elder and younger generation of tanners when the opportunity arose, mostly at the end of their workday. Those methods were complemented by drawings, sketches and graphics to illustrate the production process, but also specific aspects (e.g. rituals) of the tanners' life (see Jemma 1971, 10–14, 34, 40, 46–47, 67, 71, 101–5). In the past ethnographic drawing was very common, especially for studying material culture, but it has lost its importance today. Not surprisingly, it has been replaced almost completely by other technical inventions (e.g. photography, 3D imagery etc.). Nevertheless, this approach still holds great epistemological and methodological potential for anthropological research (see Kuschir 2016; Blumauer 2023). Besides it has a strong interdisciplinary character, applicable as a useful method for both anthropology and archaeology (Kennedy and McKenzie 2023, 41–43). Moreover, it should be noted that Jemma never lent a hand with work on the skins. The tanners did not allow her to participate in the work. This happened to me

as well during my fieldwork. This circumstance gives greater importance to observations in the field and demands to look for other ways, such as ethnographic drawing, to engage with materiality. In the further course audiovisual documentation of the craft through photography, filming and sound recording became an integral part of Jemma's research. Visual documentation and participant observation were mainly carried out at *dār dbāgh kbīra* (DDK – see Fig. 1), the biggest tannery in Marrakech until today (i.e., the time of writing). Filming as ethnographic documentation was still a methodological innovation back in the 1960s (Heider 2006, 15–16). Before, the use of filming and sound recording in the field was extremely limited through heavy, expensive equipment which required specific technical skills as well. In the post-WWII period access to cheaper and lighter equipment, like the portable 16mm camera, gradually became easier and required less technical knowledge.¹⁵ Situations in the field could be captured as close as possible: this made the methodology attractive for research and fostered the merging of ethnography and film (Gallois 2009, 85–86). After her first field stay in 1965 the 22-year-old ethnologist went together with Aityoussef back to France. They contacted the director of the *Service du film recherche scientifique*¹⁶ (SFRS) which was a branch of the well-known French *Centre national de la recherche scientifique* (CNRS). The idea was to get fundings and equipment to audio-visually document the tanners' craft during a second field stay. Besides fundings, a portable 16mm film camera and a tape recorder, the possibility came up to join a training in visual anthropology before going back to the field in autumn 1966. Support came as well from the *Comité du Film Ethnographique*¹⁷ (CFE) at the *Musée de l'Homme*¹⁸ in Paris (Aityoussef 1967, 00:00:08). It was one of the main and most important centers in the development of visual anthropology in Europe (Heider 2006, 49). Founding members of this committee, like Jean Rouch (1917–2004) or André Leroi-Gourhan (1911–1986), were pioneers of visual anthropology in France and beyond. Fostering the establishment of ethnographic film as field method and its institu-

¹⁵ Since the 1950s and 1960s, the IWF in Göttingen represented a similar centre of cinematographic documentation in the German-speaking countries for several decades: this also included ethnographic films and some of Walter Dostal's early work in the Arab peninsula.

¹⁶ A few decades later the SFRS became part of the *Centre de ressources et d'information sur les multimédias pour l'enseignement supérieur* (CERIMES), which is not active anymore since 2014. For an overview of the institutional history and related archive material dating between 1952 and 2016 see <https://francearchives.gouv.fr/findingaid/1a7cda9f039cee7ac934180d14ae031b38849fda#tree-hierarchy> (accessed 2025-02-24).

¹⁷ The decision to establish the CFE, along with other national committees for ethnographic film, was made at the 4th International Congress of Anthropology and Ethnology in Vienna, Austria in 1952 (De Heusch 2007, 366). For a full list of CFE founding members see Gallois 2009, 88–89.

¹⁸ For 'The Rise and Fall of the Musée de l'Homme' see Kuper 2024, 84–102.

tionalization, they influenced the following generations of anthropologists (Gallois 2009, 82–86, 89; De Heusch 2007, 365–86). The main outcome of the second field stay in Marrakech was a twenty-one-minute-long ethnographic film with the title *Les Tanneurs de Marrakech. Techniques et croyances traditionnelles* (1967)¹⁹. It features their work process through single steps, starting from acquiring raw skins over the production of goat/sheep leather to selling the finished pieces, besides a few scenes of the tanner's life inside of DDK. Worksteps carried out are not shown completely from the beginning to the end. Additionally, the film is a visual documentation of the tannery as a place with its different (work-)spaces. A critical analysis²⁰ of this short film is necessary to make its ethnographic nature more visible and to find out if the content has potential for a comparison (Heider 2006, 1–4). The director of the movie is officially Aityoussef, even though he filmed and recorded together with Jemma in the field. The ethnologist and her doctoral thesis are mentioned in the opening sequence to inform the viewer about the underlying scientific basis (Aityoussef 1967, 00:00:18). The understanding of leather production and the tanners' lives derives mainly from data collected by Jemma during her first field stay. It is interesting that the thesis was finished two years after the film in 1969, but neither in her thesis nor in the published version appears a remark on the film to link them. However, Jemma and Aityoussef went back to the field equipped with a portable 16mm film camera and a separate sound recorder. In the past a very common practice was to shoot downwards on people what could trigger the viewer's feeling of superiority. In most cases this practice comes from the height of the cameraman/-woman, but also through the need to find a comfortable, stable position to hold the camera (Heider 2006, 105). The latter is the case for the analyzed film. Back in the days the ground inside a tannery was extremely uneven and most of the tanning vats were built in the ground. There is no other chance than to position the camera downwards on the workers to stabilize the body on the vats' edges while trying to protect the equipment from corrosive tanning liquids. The sound is post-synchronized and a combination of moderate read narration, plausible background noises in some sequences and appropriate in-

¹⁹ The ethnographic film is available open access on YouTube: https://www.youtube.com/watch?v=kOhVuQ4eYoM&ab_channel=HistoireduMarocDesliens (accessed 2025-03-25).

²⁰ The analysis is based on some selected attributes and its dimensions described in Karl G. Heider's book *Ethnographic Film: Revised Edition* (2006, 50–109).

strumental music (Heider 2006, 51–53). A specific aspect of film sound is *gnawa*²¹ music from Morocco at the beginning and closure (Aityoussef 1967, 00:00:00-00:00:41, 00:20:43-00:20:59). Any analysis of the narration has to consider two dimensions. The first concerns the extent of information conveyed by the narration that goes beyond what is visually presented in the film. The second dimension asks to which extent the information in the narrative is relevant to the sequence. Generally, narration is most effective when sparse and very closely related to visuals (Heider 2006, 54–57). The discussed film's narration is mainly in French and read by a man, probably Aityoussef himself. The chosen wording is sometimes exotic or mystifying. For instance, little shops selling groceries or spices, which are still all over Marrakech's old town (henceforth medina/ *darġa: mdina qdīma*) today, are presented after the opening credits. The narration informs the viewer that in those shops the drug *kīf* was sold or objects for magic rituals (Aityoussef 1967, 00:00:54-00:01:10). That was probably not the case. However, most explanations of work steps are relevant, but very simplistic. Describing hardly what can be seen in the sequences and informing more about Jemma's symbolic interpretations. Accurate craft vocabulary terms for every work step are given in between by a female voice which can be identified as Jemma's. There is almost no information about the craftsmen's everyday life in the tannery or their skills and social organization, tools, techniques and materials used. In one sequence, relating to the shredding of a specific tanning named *takkut* (*tashelhit: takkawt*), the information given by the narrator is not correctly associated to the visuals shown. It is obvious that a bark, probably cork oak bark, is put into the mill (Aityoussef 1967, 00:11:18-00:12:03). As a summary, the narration can be seen as moderate but it gives hardly relevant ethnographic information to the steps shown and is therefore not useable for comparison. The narration's formulation has a strong tendency towards exoticism and mystification. Furthermore, it presents an outsider's point of view as the tanners' perspectives or voices are not included (Heider 2006, 60–64). Sequences captured in public spaces make it obvious that the filmmakers were not that much reflective on their own physical presence and acting (Heider 2006, 67–70). A man covers his face with the hand as he spotted the camera and other people look very skeptical while passing the cameraman/-women (Aityoussef 1967, 00:00:44-00:01:11). The situation is different for sequences filmed inside the

²¹ *gnawa* is a specific music genre that was introduced to Morocco during the time of slavery and therefore contains West African rhythms. It uses mostly drums and castanets for the base sound. For further information on this music genre see Becker 2020.

tannery. The tanners seem comfortable and familiar with the presence of the two filmmakers. It is recognizable through their facial expressions or by not being distracted by the camera while carrying out their work (e.g. Aityoussef 1967, 00:11:03-00:11:14). Interactions are almost completely absent in the film. In some sequences two or three tanners work together, but further interactions between the tanners and/or them and the two filmmakers are not shown (Heider 2006, 82–84). Moreover, there is no further information on the tanners' identity or personality. The filmmakers put their focus on bodies to capture techniques as well as the used spaces. Aityoussef and Jemma were definitely not able to provide a more holistic insight (Heider 2006, 64–65). The last analytical attribute questions if cultural change has been made explicit (Heider 2006, 101). It can be said that there is absolutely no tendency to recognize changes – i.e., neither for the production process nor other aspects of the tanner's work and life. On the contrary, it gives the impression that the “traditional” handicraft has not changed at all. The impression is reinforced by the sometimes exotic and mystical wording. Influences on leather production or crafts in general have always existed. Especially the French protectorate (1912–1956) had a strong impact on Moroccan craftsmanship (see Irbouh 2005). But these influences are thematized in more detail in the main part of the presented thesis. Now it should be clarified if the ethnographic film by Aityoussef and Jemma is suitable for a comparison before continuing with the third and last section of this chapter. The analysis made it obvious that the sparse ethnographic information given through a one-sided narration is clearly not relevant for comparison. It contains more symbolic interpretations rather than relevant information and completely disregards the tanners' point of view. On the other hand, it is possible to compare visual images of single work steps relating to producing goat/sheep leather, even if those are not shown in full. Visual images give insights into (body) techniques, the state of skins, materials and the use of tools and (work-)spaces. The captured interactions in the ethnographic film are rare, but they help to provide a little insight into work organization of leather production in the 1960s. In short, the film about the tanners is not holistic and has its weaknesses. Nevertheless, it is still ethnographic in nature with an underlying scientific structure, but only the visual images are suitable for comparison. Since it is the only known audiovisual documentation about the leather craft in Marrakech so far, the ethnographic film remains to an extent an important and unique historically situated albeit limited source material.

The Ethnography *Les Tanneurs de Marrakech* (1971)

The first two sections of this chapter provided biographical insights and more information on Jemma's research achievements and her fieldwork among the tanners of Marrakech. This chapter's final section presents a summary and analysis of her ethnography *Les Tanneurs de Marrakech*. Furthermore, it aims to explain approaches in which way this ethnography is used for the master thesis. As previously mentioned, Jemma's ethnography is based on her doctoral dissertation. For the presented comparison in this MA thesis, her published version from 1971 is used, except where information of the original dissertation is necessary to emphasize. For instance, the doctoral thesis contains richer, more comparable descriptions of *Āshūrā*²² celebrations during the first ten days of *Muḥarram*, the first month of the Islamic year (Jemma 1969, 121–42; cf. 1971, 99–103). Nevertheless, *Les Tanneurs de Marrakech* remains a unique and valuable source, documenting an essential aspect of Marrakech's cultural heritage. To date, no comparable ethnographic study exists on the city's tanners and their craft. With her proficiency in Arabic, Jemma developed a transcription system for craft related terms, aligning more closely with French phonetics since the ethnography is written in French (Jemma 1971, 4). In the introduction she states her intention to investigate a rather little-known artisanal technique which has been avoided by researchers, at least in the case of Marrakech. Beyond documenting the production process, her study aims to capture how tanners experience their work and the tannery as a space. Additionally, she examines the migration of leather craft through Morocco and how the tanners' neighborhood and lives are embedded within the city's social structures, networks, and annual religious cycle (Jemma 1971, 5).

In the first chapter, Jemma provides a brief overview of Marrakech's geographical location, inhabitants, history, and the spatial organization of the medina. She particularly emphasizes the seven gates of the city's ramparts and the Seven Saints of Marrakech, highlighting the symbolic significance of the number seven in the city's cultural heritage and spatial structures. The Seven Saints²³ are seen as the city's pa-

²² *Āshūrā* refers to the 10th day of *Muḥarram* as important religious holiday for Muslims whereby it has different significance and associated rituals among Sunni and Shia Muslims (Melton 2010a, 210–12).

²³ In history a pilgrimage named *ziyara* was performed from sanctuary to sanctuary. It was established by Moroccan authorities in the 17th century to boost Marrakech's economy. The *ziyara* is not performed anymore but the sanctuaries still exist and are visited (Errazki-Van Beek 1993, 211–14; Wilbaux 2001, 108–9).

trons, buried in a circle across the medina (Jemma 1971, 9–14). Following this, she examines the two tannery quarters, *Bāb Dbbāgh* and *Riaḍ Laarous*, which existed at that time within the medina. Specific locations within these quarters that hold social and religious importance for the tanners, such as the Mosque *Sidi Ben Yaccub*, are described in detail (Jemma 1971, 14–17). The next chapter covers the tanner's origin myths about *Sidna Suliman* and *Sidi Yaccub ed-dbbāgh*. Jemma attempts to use those myths – narrated by tanners belonging to the Amazigh²⁴ tribe *Ida ou Zeddout* – to trace the migration of leather craft in Morocco. According to her findings, the craft moved from Taroudant in southwestern Morocco to Marrakech, then onward to the northeastern provincial town of Demnate, and finally to Fèz (Jemma 1971, 23–26). The ethnography's main part consists of very detailed descriptions of every observable work step in leather production. It begins with acquiring raw skins on the market, its preparation, the tanning process itself, postprocessing and the selling of finished leather pieces. The same structure underlies the above-discussed ethnographic film. The primary focus is on the production of sheep/goat leather even though cattle leather is the specialty of Marrakech's tanners, what is still the case nowadays. Information about workspaces, tools, materials, measurements of vats and tools were given and illustrated with ethnographic drawings and photographs (Jemma 1971, 29–50). The main part is followed by the chapter *Symbolisme du tannage et de la peau* which examines the symbolic meanings connected with tanning and animal skin. In short, Jemma's defines tanning as a transformation process from death (slaughter) to life (everyday usage). Through every work step life is gradually breathed back into the animal skins to bring it back alive as leather (Jemma 1971, 55–61). Following this, she dedicates a whole chapter to the general situation of the tanneries in the quarter *Bāb Dbbāgh* and specifically of the tannery DDK. Thematically addressed are various spaces, their interiors are illustrated by a hand-drawn map and connected with its symbolic meanings (Jemma 1971, 65–75). Another chapter deals with the social position of the tanners within Marrakech's society. Insights into their religious and social life are given by discussing aspects such as knowledge transmission, initiation of apprentices but also the embeddedness in the ritual cycle of the city. The latter is well illustrated by ethnographic drawings again. Moreover, Jemma analyzed the connections between the tanners and other (craft) quarters in the medina (e.g.

²⁴ In Morocco many prefer the broad term “Imazighen” – defined as “the free men” – as self-designation instead of “Berber” or in its adjectival form “Amazigh” and use specific names for individual tribal groups.

neighboring potters/brickmakers, *sūq*). Just a short note is given about females' lives and presence at *Bāb Dbbāgh* in the end of this chapter (Jemma 1971, 79–92). Before concluding her study, she examines the participation of tanners in Marrakech's annual festivities and rituals, as well as the impact of seasonality on leather production and social life (Jemma 1971, 99–110). Jemma summarized her findings which should prove the migration of leather craft from one to another Moroccan city. She emphasized again the strong symbolism behind tanning and how cultural and social aspects of the tanners' life are closely interwoven with the medina of Marrakech (Jemma 1971, 113–15).

Based on this overview what follows now is an analysis focused on three questions: What influences did French anthropology have on Jemma's work? How does she document the technological processes of leather production? And why is it important to critically assess her characterization of the tanner's craft as "traditional"?

To understand the influence of French anthropology, it is useful to examine the references she used and the discipline's developments from the 1920s to the 1960s. The interwar period marked a transition from armchair anthropology – practiced by sociologist Émile Durkheim (1858–1917) and his circle – to the establishment of long-term fieldwork after World War II (Parkin 2005, 157–59, 169). The nephew and former student of Durkheim, French sociologist and anthropologist Marcel Mauss (1872–1950) made significant contributions to the study of religion, symbols and rituals based on inductive positivism. In 1925, Mauss, along with Lucien Lévy-Bruhl (1857–1939) and Paul Rivet (1876–1958), founded the *Institut d'Ethnographie* at the University of Paris. Mauss taught, according to his students in a very amusing way, courses in ethnography and field methods²⁵ at this institute. It was mainly funded by the French Colonial Ministry and was a training center for colonial officers (Parkin 2005, 200–202; Kuper 2024, 88–90). But why was an institute established which focused entirely on ethnography? Beyond the nation's need for trained colonial officers, the answer lies in the clear labor division within French anthropology. There were those who concentrated on the development of theories and methodologies based on data collected by others, and those who put ethnography over theory, providing ethnographic material from the field for others to combine it with theory (Parkin 2005, 157). A widely influential researcher in French anthropology and history of the postwar period was the ar-

²⁵ Even though Marcel Mauss taught ethnography and field methods, his only field research was a three-week trip to Morocco in 1909 (Parkin 2005, 155).

chaeologist and ethnologist André Leroi-Gourhan²⁶ who was already mentioned in the previous section as a member of the CFE at the *Musée de l'Homme* where Jemma were trained in visual anthropology. Leroi-Gourhan is often regarded as a proponent of multilineal evolutionism, even though his work was influenced by other theoretical branches such as positivism (from his time as a student of Mauss alongside Marcel Griaule) and the structuralism of his colleague Claude Lévi-Strauss (1908–2009) (Schneider 2005, 23–43; Audouze 2002, 6–7). Leroi-Gourhan's research aim was to study material culture, in particular tools and technology and their impact on human evolution and society²⁷. In his understanding techniques are the only human activity traceable from prehistory to modern times and central to human evolution. What distinguishes Leroi-Gourhan from most of his colleagues is the diachronic dimension of his studies. Moreover, he laid the foundation for comparative technology studies and gave rise to the French schools of cultural technology and ethnology of techniques (Audouze 2002, 3, 8, 11; Parkin 2005, 218). In the reference list of Jemma's ethnography two major works of Leroi-Gourhan appear: *L'Homme et la Matière* (1943) and *Milieu et Techniques* (1945). Those monographs contain an innovative typology and classification of techniques and tools as well as a theory of technique focusing on technical modes of action on matter to explain technical processes, innovation and diffusion (Audouze 2002, 11). By the 1950s Leroi-Gourhan had developed and coined the term for a highly comparative analytical method, called *Chaîne opératoire* (or engl. “operational chain” or “sequence”)²⁸ (often used by the acronym CO) in his two volumes work *Le Geste et la Parole* (1964-65). It is applicable to past and modern techniques for comparing technical facts, identifying continuities and changes, and for understanding their links to other dimensions (Coupaye 2022, 39–40; Schlanger 2025, 42–47). Referring to N. Schlanger's very basic definition, a CO implies a ‘[...] range of processes by which naturally occurring raw materials are selected, shaped and transformed into usable cultural products.’ (2005, 18). Moreover, it links those (technological) processes with the human body (e.g. gestures and tools), human and non-human actors, and other categories like environment, economy, kinship, (tacit) knowledge, gender, politics, religion etc. In anthropology and archaeology, the CO shifted the focus from studying finished objects (derived from museum-

²⁶ A very detailed biography of Leroi-Gourhan's life has been compiled by P. Soulier (2018).

²⁷ For further readings on Leroi-Gourhan's work on technology I recommend Schlanger 2025.

²⁸ For both, anthropologists and archaeologists, it is an ethnographic method and should not be mistaken as a theory. It is solely a documentation and always a product based primarily on the researcher's encounters with interlocutors and observations (Coupaye 2022, 41, 45).

based studies) to examining the processes by which they are made (building on fieldwork-based studies), along with their relationships to the aforementioned categories (Coupaye 2022, 41; Lemonnier 1992, 26). In the appendix of Jemma's ethnography, she included a detailed CO²⁹ for leather production in Marrakech which captures technological processes. This also answers the second question of the analysis in this section. For this master thesis a contemporary CO was created for comparison, which follows the structure of Jemma's CO. It is based on qualitative data collected by this author during her field research in 2023/24 and got extended with further categories that are discussed in the thesis' main part. It provides a further basis for interpreting archaeological data relating to leather craft but also guarantees a comprehensive ethnographic documentation and description of leather production today. One controversial figure in French anthropology and student of Mauss was Marcel Griaule (1898-1956) who completely rejected theory in his work, and as such, cannot be associated with a particular theoretical position. Griaule faced strong criticism for his unethical fieldwork practices and impressionistic ethnographic writings. He was known for establishing unequal power dynamics with his interlocutors and for staging situations (e.g. rituals) instead of waiting for them to take place as they were supposed to (Parkin 2005, 202–3). He was convinced that fieldwork and ethnography are more important than theories, except for a theory of fieldwork itself. In 1957 the book *Méthode de l'Ethnographie*³⁰ (1957) was posthumously published and became extremely popular in the postwar period in France (Parkin 2005, 217). It appears in the reference list of Jemma's ethnography, even though it is neither discussed nor cited within the text or footnotes (Jemma 1971, 121). Generally, the ethnologist avoided reflecting on her research approach by not referring to relevant theoretical or methodological publications in the text or footnotes. She just put them in the reference list at the end of the ethnography which seems by today's standards of academic writing including reflexivity on the researcher's own positionality rather strange. Returning back to Griaule's book, it contains instructions on the organization of fieldtrips and -work, emphasizing the necessity for arrangements of rituals, ceremonies etc. by the researcher(s). It also provides instructions on how methods like observation, questionnaires, photography, and ethnographic drawing should be sys-

²⁹ The CO of Jemma got digitized and translated from French to English by the author (see Appendix).

³⁰ It was impossible to gain access, analogous or digitally, to Griaule's book. The information provided is from an article written by B. I. Šarevskaja which consists of a useful summary, cited in this section, and a non-critical analysis which is not relevant for this section (see Šarevskaja 1964).

tematically applied to collect data (Šarevskaja 1964, 590–93). Remembering the above-thematized methods of Jemma, one can recognize a possible influence of Griaule on her work. Like him, she seems to have prioritized ethnography over theory, a common tendency during that period while the works by Louis Dumont (1911–1998) and Lévi-Strauss still were in *statu nascendi*. But unlike Griaule she maintained a more ethical approach to her field research and relationships with interlocutors. Any influence through deduction-based structuralism by Lévi-Strauss, which was gradually becoming part of mainstream anthropology in France in the 1950s/60s, is not traceable. This is no surprise as structuralism had no focus on studying material culture or technological processes (Parkin 2005, 208–17, 221, 231). Another theoretical branch in French anthropology at the time yet somewhat later was Marxism, as seen in the work of Claude Meillassoux (1925–2005) (Parkin 2005, 220). Marxism, however, is not going to be thematized here as it was not relevant for Jemma’s ethnography. Religion, mythology, and symbolism were central topics in French anthropology between the 1920s and 1960s, which may explain Jemma’s strong emphasis on symbolism and her interest in the tanners’ myth, rituals, and religious festivities. In her references, she listed works by scholars such as Roger Caillois (1913–1978), Mircea Eliade (1907–1986), and Alfred Métraux (1902–1963), who similarly focused on these themes in their research (Jemma 1971, 119–22; Parkin 2005, 204–7, 218–19).

The final part of this analysis raises the question why the description of leather craft as “traditional” should be reconsidered to answer the third and last question. Jemma compared her ethnographic knowledge about Marrakech’s tanners with other studies of this craft in Fèz, Tétouan, Salè, and Rabat, likely to offer a regional comparison of techniques, tools, and (work)spaces. These studies have one thing in common, namely that they are written by people who were connected in different ways with the French protectorate’s administration between the 1900s to 1950s (e.g. Rene-Leclerc 1905; Le Tourneau and Paye 1935; Terrasse 1949; cf. Irbouh 2005, 27). One cited example is the report by the *contrôleur civil* André Hardy (1908–1980) about the tanners of Salè and published in the *Bulletin Économique du Maroc* in 1938. At the end he proposed concrete ideas on how the craft can be economically improved through a modernization of tanneries and techniques and that the production and social organization needs to be controlled (Hardy 1938, 190–99; cf. Berger 2013, 116–19). The intention behind these studies of local “native industries” was mostly to deter-

mine how it can be influenced or restructured by French authorities to increase its production for local use, tourist trade and foreign, mainly European, markets. At the same time, the idealized image of “traditional authentic artisanal craft”, considered to be strongly associated with crafts practiced by Imazighen, needed to be maintained as there was a high demand for such “authentic” products. To gain control and influence over Moroccan craft, the *Office des Industries d’Art Indigènes* was created in 1918. Besides other French colonial institutions in Morocco it had a significant impact on social organization as well as on knowledge transmission among Moroccan craftsmen (Irbouh 2005, 27, 30, 47–68; Mokhiber 2001, 189, 291–92). In her ethnographic study, Jemma did not critically engage with the cited sources, ignoring the influences of the French Protectorate on various aspects of leather craft. Consequently, my master's thesis incorporates a strong historical component, aiming to decolonize the knowledge surrounding Moroccan leather craft and providing some pre-colonial insights which are as well useful for archaeological interpretation. After the life and work of (Maryam) Danièle Jemma-Gouzon has been extensively discussed we now move on with the main part of this master thesis.



Fig. 1: *dār dbāgh kbīra* where D. Jemma mainly carried out her research in the 1960s (Photo: V. Immervoll, Marrakech, February 2024)

Historical Context of Leather Craft in Marrakech

Marrakech (*Mrrakesh* or *Mrrakush*) is embedded in the Haouz plain north of the High Atlas Mountains and surrounded by three rivers – *oued Tensift*, *oued Ourika* and *oued Issil* – which have been vital to the city's flourishing over the last centuries. The city has a semi-arid climate, marked by long, hot summers and mild, relatively short winters and, therefore, heavily depends on these three main water sources. Generally, the year is divided into two main seasons: a dry, intensely warm summer and a cooler winter with limited but concentrated rainfall. These seasons are becoming increasingly blurred as a result of climate change towards higher temperatures and more, longer periods of drought. Especially the *oued Issil* running from south to north along the Eastern part of the medina was always crucial for crafting leather but is now a dry riverbed. Until around 1860 the city was referred to as “Morocco” in English or “Maroc” in French, a name that would later come to designate an entire kingdom – the present-day Kingdom of Morocco. Before we dive deeper into the community of tanners and the tannery *dār dbāgh*, let us take a closer look at the city's development and the historical traces of leather craft in Marrakech. The development of the craft is strongly connected to urban developments and transformation throughout time until today. The vibrant city has a long and multifaceted history which can be only touched on its surface. Therefore, the focus of this subchapter is only on epochs or dynasties relevant for the master thesis: the Almoravid period (1050s–1147) during which the city was founded and the first traces of leather craft are suspected; followed by the Almohads period (1147–1269) for which a historic written evidence in connection with Marrakech's leather craft was found; after that several centuries are skipped before the 'Alawi dynasty (1631–present) comes into focus, followed by the French protectorate period (1912–1956) and some shortly summarized key developments after Morocco's independence in 1956 with a focus on Amazigh identity. The aim is to provide a better understanding of the historical embeddedness of leather craft and the contemporary situation, specifically of Marrakech's tanners. Moreover, this should help to give the reader an orientation of today's spatial structures and spaces inside the medina. For the same purpose, a map of Marrakech's medina is provided on the next page showing the tanners' quarter (“Quartier des tanneurs”) and important spaces (e.g. markets, drying place) connected with Marrakech's leather craft as well as the Ben Youssef Mosque and Medersa for orientation purposes:

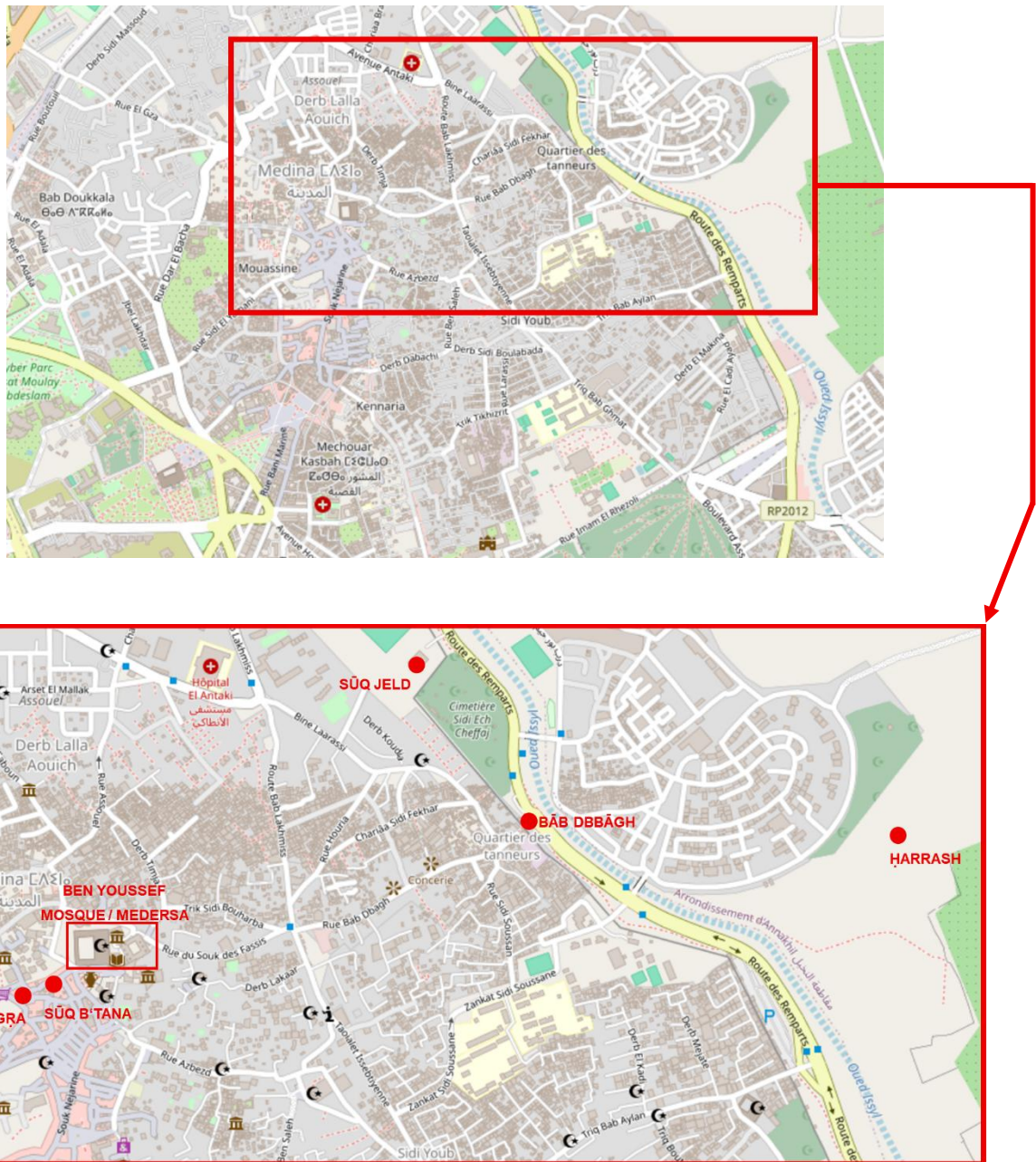


Fig. 2: Map of Marrakech's medina (Source: Open Street Maps; edited by V. Immervoll, August 2025)

The Almoravid Dynasty (1050s–1147)

Marrakech was founded in 1070 during the Almoravid movement under the leadership of Amīr Abu Bakr Ibn Umar (d. 1087). The Almoravids emerged initially as a movement of tribes of an Imazighen-confederation, named *Ṣanhādja*, consisting of sedentary and (semi-)nomadic tribes from the western Sahara who had been influ-

enced by Islam³¹ since the 9th century (Abun-Nasr 2012, 79). Almoravid men were known for wearing face veils (*lithām*), a sign of social status with a strong symbolic meaning which gave them the name *mulaththamūn* (wearers of the *lithām*) in Arabic written sources. Another characteristic of the *Ṣanhādja* was that a matrilineal pattern of inheritance existed, which gave women a high social status within the tribal society (Bennison 2016, 122–30). Over time, the Almoravid empire expanded to cover large parts of what are now Morocco, Algeria, Mauritania, Senegal, Portugal and Spain (al-Andalus). One reason why the Almoravids gained some much power and wealth over the decades was their control over two major strategic cities in the trans-Saharan caravan trade network: Sijilmāsa, now known as Tafilalet, and Aghmat. Along the trans-Saharan routes goods such as salt, grain, gold and slaves were carried and the caravaneers needed to pay the Almoravids to move safely through the desert (Bennison 2016, 177–226). The Almoravids established the first major structures in Marrakech, extended it constantly and shaped its layout for centuries to come (Stockstill 2024, 26–28; Bennison 2016, 24–26). Initially constructed as a military encampment, Marrakech flourished within a few decades into a significant cultural, economic and religious metropolis, where craftsmen and merchants settled, workshops and markets emerged. In the first phase of the city's development of the above-mentioned Abu Bakr Ibn Umar ordered to build the *Qaṣr al-Ḥajar*, a citadel made of earthen materials located in the South of the medina and today known as the “Kasbah of Marrakech”. It is a central point on the north-south axis upon which Marrakech developed. Still during his lifetime and before going to the battlefield in the Southern regions Abu Bakr appointed general Yusuf ibn Tashufin (d. 1106) as his successor who played an important role in the further, second phase of Marrakech's development. Under his leadership the Almoravid empire expanded rapidly to more Northern territories including Fèz and later up to al-Andalus. Even before the Almoravid conquest of Portuguese and Spanish territories, there were close cultural and economic relationships between these regions and North Africa. In medieval al-Andalus the leather craft was an important industry where vegetable-based tanning was common. One well-known center in leather production was the city of Córdoba. It can be assumed that there was an exchange of knowledge and various technologies related to leather production within the Almoravid empire even though today it is impossible to trace back the

³¹ It is assumed that the influence of Islam among the *Ṣanhādja* came from Amazigh traders who were Kharijite Muslims, involved in trans-Saharan trade and depended on the protection and support of the *Ṣanhādja*-confederation (Bennison 2016, 25, 232; Stepanova 2018, 6).

origin of certain techniques (de la Llave 2007, 743, 751–53; Bennison 2016, 206). The demand for leather was always high, not only to manufacture items like shoes or bags but also in the military to manufacture saddles or armor for soldiers or horses and camels (see Nicolle 2013). The geographer and cartographer Muhammad al-Idrīsī (1100–1165), who was born in Ceuta during the Almoravid dynasty and studied in Córdoba, mentioned the Almoravid leather shields called *lamṭiyaa* in his work, translated as *Opus Geographicum*. It consists of geographical description of al-Andalus and North Africa and is also known as *kitāb rujar*, the “Book of Roger” as it was completed in 1154 for the Norman king of Sicily Roger II. These shields were made from hardened desert gazelle leather (*lamṭ*) being lightweight and very robust for defense (al-Idrīsī 1970, 224–25; cf. Bennison 2016, 42; Boum and Park 2016, 146). It can be assumed that in general leather played a crucial role as important resource and trading good during the Almoravid period. Hypothetically, it would have been possible that the first tanners settled in Marrakech when the city was founded, especially after Marrakech became the capital of the Almoravid empire under the rule of Yusuf and thus gained importance as a center for crafts. The status as capital city fostered also the urban development with expanding the citadel and constructing the first mosque in town. The *Masjid al-Tūb* (the earthen mosque) was centrally constructed on the north-south axis approximately where today’s Ben Youssef Mosque is located. The north-south axis functions still as the medina’s commercial artery along which the numerous *sūqs* are located (Wilbaux 2001, 219–20; Gómez-Rivas 2015, 53). After the death of Yusuf in the year 1106 his son Ali Ibn Yusuf came into power and with him an intense process of urbanization started, the third phase of the city’s development within the Almoravid period. The earthen mosque was replaced by a new one and in the 1120s the Almoravids erected a high city wall to protect Marrakech from invaders and to impose a spatial framework that would shape the city’s urban development. This wall, modified and expanded to the south and north over time, still encircles the old town of Marrakech today (Stockstill 2024, 55; Wilbaux 2001, 167–70). With the first foundations of the city wall, gates were implemented as well. The gates of the wall played an important defensive role and served as checkpoints to monitor the population, traders etc. moving in and out of the medina. Today, there are 19 city gates, but only one of which is named after a craft. This is the gate *Bāb Dbbāgh* (“Gate of Tanners”) located on the Eastern side of the medina serving as entrance directly into the tannery quarter. *Bāb Dbbāgh* is the most complex gate of

the medina until today and the only one that was named after a craft, which points to the important significance of leather production for this city. C. Allain³² (1920–2001) and G. Deverdun (dates of birth and death unknown) suspected the first structures of the gate being erected in the Almoravid period, whereby it is first mentioned in historic sources with the takeover of the city by the Almohads in 1147 (Allain and Deverdun 1957, 95–98). Until today no archaeological or historic evidence exist to clarify if the first structures of *Bāb Dbbāgh* were erected during the period of the Almoravids. Together with the *Bāb Doukkala* it forms the east-west axis of the medina. Influenced by contemporary developments in astronomy, Ali aligned the architectural expansion of the city – including the construction of the new mosque and city wall – with the direction of the *qibla*, the direction towards the *Ka'ba* in the Sacred Mosque in Mekka (Wilbaux 2001, 223–24). Under his leadership, Marrakech emerged not only as the political capital of the Almoravid Empire but also as a significant religious center. The city played a key role in promoting the spread of a militant form of the Maliki school of Islamic jurisprudence (*fiqh*) – also known as Malikism – throughout the empire. The Almoravids institutionalized Maliki-oriented Sunnism³³ as the empire's foundational religious and legal doctrine, systematically extending its reach from Córdoba to West Africa. This resulted in an unprecedented level of uniformity across the region which gave the basis for constructing a stable governmental structure within the empire (Bennison 2016, 238–46). Even today, around 99% of Morocco's population are followers of Sunni Islam based on the tradition of Malikism (Lahlou and Zouiten 2019, 9, 12). There are two remaining archaeological and architectural traces from the Almoravid period under the rule of 'Ali in today's medina. The first is a minaret of the former mosque, named *Masjid al-Siqaya*, integrated into today's Ben Youssef Mosque which was constructed in the 19th century. The minaret got excavated in the 1950s by C. Allain and G. Deverdun and was part of the centrally located mosque built by Ali (see Deverdun and Allain 1961; Wilbaux 2001, 223–24). Nearby the second archaeological evidence of a former Almoravid presence is the domed building *Qubbat al-Barudiyyin*, which is known for its rich and finely crafted stucco decoration on the inside (Wilbaux 2001, 221–23). Although the exact function of this building is still unclear, one persisting hypothesis – though much questioned – is that it served as a

³² For further information about the archaeological work and life of the autodidact C. Allain see Bréhéret and Cressier 2022.

³³ In sum there are four schools (*madhhab*) of jurisprudence within Sunni Islam. Malikism was founded in the 8th century by the Yemenite Malik ibn Anas al-Asbahi who was born and raised in Madīna (Melton 2010c, 1793–94).

water fountain used for ablutions (*wuḍūʿ*) before prayer (Stockstill 2024, 32–36). A third very important object of the Almoravid material culture that has survived to this day is a carved wooden *minbar* (pl. *manābir*), which is one of the exquisite and oldest objects of its kind in the whole Islamic world. Generally, a minbar functions as pulpit for the *imām* inside of a mosque from which he leads prayers and delivers sermons. It probably originated from raised seats used by judges in pre-Islamic Arabia. In 1137 the Almoravid minbar was commissioned in Córdoba by Ali for his new mosque in Marrakech. In total it took five years to finish the masterpiece which is crafted from a variety of woods imported from far away regions like Senegal and the Levant expressing the extent of the Almoravid trading network. Moreover, it serves as a symbol of religious as well as political power and prestige (Stockstill 2024, 8–9; Gómez-Rivas 2015, 46–47).

The Almohad Dynasty (1147–1269)

The Almoravids were not able to enjoy sight of the minbar for long. The Almohads conquered Marrakech in 1147 and established another important empire of the medieval Islamic West that existed until 1269. The Almohad empire stretched across the entire Maghreb, al-Andalus and reached the eastern borders of modern Tunisia. At the beginning the Almohads formed a movement led by Muḥammad Ibn Tūmart (d. 1130). He was a basher against the Almoravids Malikism and its jurists and presented himself as *mahdī*, a messianic figure believed to be sent to revive true Islam and usher in an era of peace and justice which led to a strong belief into Mahdism. The Almohad movement stemmed mainly from the *Maṣmūda* confederation composed of pastoral, but on the contrary to the *Ṣanhādja* confederation, mainly sedentary tribes inhabiting the High Atlas Mountains and the Sus valley (Bennison 2016, 66, 130). But the Almoravid dynasty itself arose under the leadership of Abd al-Muʾmin (d. 1163) who conquered the urban metropolis Marrakech and decided to keep the status of it as the imperial capital city. From a historiographic point of view the Almoravids together with the Almohads are often described as “Berber” dynasties. This ethnocentric designation as “Berber” dynasties and the concept behind are rooted in the *Kitāb al-ʿIbar* ³⁴ by the famous Arab Islamic scholar Ibn Khaldūn (1332–

³⁴ The North African part of the seven volume work of Ibn Khaldun was translated to French by the Irish orientalist W. MacGuckin de Slane as *Histoire des Berbères et des dynasties musulmanes de l'Afrique septentrionale* (1927).

1406). Basically, the *Kitab al-'Ibar* (1927 [written in the 1380s]) is a very detailed analysis of the history between Arabs and Imazighen in North Africa. With a comparable approach Khaldun describes the similarities between the Almoravid and Almohad empires and used it for his famous universalist cyclical theory of empire formation and collapse. Western scholars have developed a strong tendency to refer in their research to the *Kitāb al-'Ibar* continuing to dichotomize the two dynasties. This non-nuanced perspective creates a simplistic understanding of the complex processes behind tribal politics and Islamization of the Maghreb excluding various other forces of medieval North Africa and al-Andalus (Stockstill 2024, 5). In the work of the historian A. K. Bennison, cited in this subchapter as well, a more differentiated perspective is given on the history of the Almoravids and Almohads thematizing also the colonial legacy of the dichotomy (see Bennison 2016, 4–9). What is maybe less known and often overlooked is the fact that French colonial historians adopted the view that both empires represented indigenous “Berber” attempts at state formation. They added their own interpretation by suggesting that the collapse of these empires reflected a pattern of political failure among the Imazighen. This, they argued, created an opening for “foreign” Arab dynasties to assert dominance over a “Berber” population – a situation they claimed was only stabilized with the establishment of French colonial rule (Bennison 2016, 6).

During this period, Marrakech rose to the status of an imperial city. The Almohads constructed the now well-known al-Masjid al-Kutubiyya (or Koutoubia Mosque) with its iconic minaret, which later became a model for Islamic architecture in the Western Islamic world. They also laid out the Agdal Gardens, an example of refined landscape architecture sustained by an advanced water-supply system. The gardens played a vital role in the flourishing of pre-modern Marrakech and were essential for various crafts (Stockstill 2024, 58–71, 78–83). The city’s water supply depended entirely on an ancient system of gently sloping underground tunnels known as *khettara*³⁵ (Wilbaux 2001, 139–66). Dating back to the Almoravid dynasty, the system was later expanded by the Almohads in the 12th century. During the French colonial period, the importance of *khettara* declined with the introduction of modern hydraulic technologies and changes to the legal framework governing water access. The colonial administration also sought to restructure the agricultural system of the Haouz plain. This

³⁵ In Algeria the traditional water supply system is known as *foggāra*, in Oman as *falāj* and in Iran as *qanāt*. All three water supply systems are based on the same technical principles and provided or still provide water in (semi-)arid regions see Charbonnier 2018.

transformation of water management was part of a broader “modernization” program for Haouz agriculture, discussed *en detail* in the second volume of P. Pacon’s *Le Haouz de Marrakech* (1977, 493–508). The colonial administration altered not only the water-supply system but also the tribal legal systems, previously based on Qur’anic law and deemed “insufficient”. Under the *Code des eaux au Maroc* (1919), “[...] water ownership was declared to be in the public domain, which allowed the colonial state to monopolise and control water reserves.” (Ascanio-Sanchez et al. 2019, 73). After independence, the decline accelerated, driven by rapid urbanization, over-extraction of groundwater through motorized pumps, and insufficient maintenance (Pascon 1977, 494–95). Today, many *khattara* are dry, collapsed, or forgotten, though they have recently regained attention in discussions of sustainable water management and cultural heritage conservation. The *khattara* system was significant not only for urban supply but also for oasis cultivation in Morocco’s arid rural regions, as documented for the Tafilalet oasis (historically Sijilmāsa) (see El Faiz and Ruf 2010). The Almohads also extended the city wall and its gates. As noted earlier, the first structures of *Bāb Dbbāgh* were likely built during the Almoravid period. However, a written source confirms with certainty the gate’s existence – and thus the presence of leather craft in Marrakech – by the 12th century, under Almohad rule. The existence of the medina gate is mentioned in *Regard sur le temps des Soufis*³⁶ (1994 [1220]) by Ibn al-Zayyāt al-Tādilī (d. 1230), a hagiography written around 1220. The work contains biographies of Sufi saints from Marrakech and its surrounding region, who held high status during the Almohad dynasty, when Sufism flourished. *Bāb Dbbāgh* is mentioned 19 times, with the earliest reference dating to 1182 (577 AH). Al-Tādilī’s account also notes a cemetery outside the eastern city wall (al-Tādilī 1994 [1220], 176–77). Even today, a “*Cimetière de Dbbagh*” exists not far from the gate, marked by a sign above its entrance, likely established within the last century (see Fig. 3). In the same period as al-Tādilī’s hagiography was written, there already existed a mosque in the tannery quarter named Bi’r al-Janna. Today it is known as al-Masjid Sîdî Abî Yacqûb al-H’akîm à Bâb al-Dabgh, or simply Mosque Sidi Ben Yacub, which remains highly significant for Marrakech’s tanners today (al-Tādilī 1994 [1220], 220, 402-footnote 807). The mosque was not visited during field research, as non-Muslims are generally not permitted to enter religious sites – a restriction already enforced by the late 19th century (Lenz 1884, 145). Exceptions exist, such as for the

³⁶ The original title of the book is *Al-Tachawwuf ilâ rijâl al-Tas’awwuf*.

Koutoubia or Hassan II Mosque in Casablanca. In this case, the restriction was respected, since the author of this thesis is not Muslim.



Fig. 3: Entrance to the cemetery next to the tannery quarter (Photo: V. Immervoll, Marrakech, September 2023)

The 'Alawi Dynasty (1631–present)

In the 17th century, a few hundred years after the Almohads, the 'Alawi dynasty came to power and restored Marrakech as one of their main royal centers after a period of political fragmentation. Although Sultan Moulay Ismā'īl (r. 1672–1727) made Meknès his capital, Marrakech was controlled by the 'Alawi since 1668 and retained strategic as well as symbolic importance. The 'Alawis repaired parts of its city walls and mosques and invested in maintaining monuments of the Sa'dī dynasty (1510–1659), particularly the Badi' Palace and the Kasbah quarter. Later 'Alawi rulers alternated their residence between Fèz, Meknès, and Marrakech, maintaining the city as an economic, political, and military base for controlling southern Morocco and the trans-Saharan trade routes (de Cenival 2007, 328–32). Moroccan leather craft flourished during the 'Alawi reign, particularly in the cities of Fèz, Marrakech, and Rabat. Information about leather craft from this historical period derives mainly from European

sources consulted during the research for this thesis. The first source comes from the Danish government official G. H. Høst (1734–1794), employed by a Danish-African company as assistant commissioner. This brought him to Morocco for eight years (1760–1768). His impressions were published in a book entitled *Nachrichten von Marokos und Fes, im Lande selbst gesammelt, in den Jahren 1760 bis 1768*³⁷ (1781). The book was translated from Danish to German in the 1780s, though the translator remains unknown (see Kay and Green-Pedersen 2011). Høst remarked on the quality of Moroccan leather and its connection to Amazigh craftspeople – referred to as “Berber” – writing: “[...] einige wenige Berber bereiten die bekannten Maroquins oder Safianfelle, wovon man die besten rothen in Fes, und die besten gelben in Marokos bekommt. Das beste Solenleder wird in Rabat gemacht, [...]” (Høst 1781, 267). The term “maroquin” historically refers to high-quality, vegetable-tanned goat leather from Morocco, primarily used for book covers and fine leather goods. Moroccan leather was likely an important export good to European markets even before the 18th century, where it was further crafted into luxury goods (Baudot and Rival 1995, 144–59). Høst also noted that high export duties on red and yellow leather were already in place during his stay in Morocco (Høst 1781, 275). The ethnologist Jemma likewise defined goat leather as “maroquin” (see Jemma 1971, Appendix). Notably, Moroccan leather was distinguished by color and city of production: red leather from Fèz, known as *ḥamāder*, and yellow leather from Marrakech, called *ziwani*. This distinction has remained well known within Moroccan society and beyond. About 100 years later, another detailed historical report was written by the Frenchman P. Lambert (dates of birth and death unknown). His work, which included a map of Marrakech, provides important historical context for leather craft in this thesis. Unfortunately, little is known about Lambert’s biography beyond a few notes in the book of German-Austrian explorer O. Lenz (1848–1925), who mentioned that Lambert lived in Marrakech for a few years and worked for the French (Lenz 1884, 254, 257). Lenz’s biographical context and work are discussed below. In his *Notice sur la Ville de Maroc* (1868a), Lambert provided valuable (statistical) insights into the city’s population and crafts. In the 1860s, he estimated Marrakech’s population at approximately 50,000 – excluding women, as he emphasized. With regard to leather craft, he recorded around 1,500 tanners, shoemakers, and cobblers, making it the city’s largest craft sector during that decade. He further observed: “Maroc, n’est point une ville industrielle comme

³⁷ The original title of the publication in Danish is *Efterretninger om Marokos og Fes, samlede der i Landene fra 1760 til 1768*.

Fèz et Rabat; les habitants donnent la preference à l'agriculture [...] la seule industrie sans rivale à Maroc est celle de la tannerie: presque tous les tanneurs travaillent ici à leur propre compte.” (Lambert 1868a, 440–41). Lambert’s account of Marrakech also included a detailed map of the medina, showing both the tannery quarter and the adjacent potters’ quarter (see Lambert 1868b):

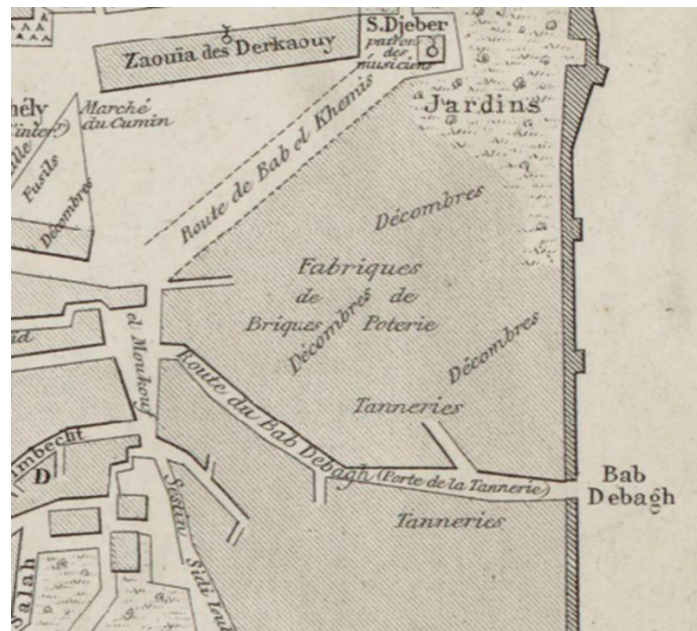


Fig. 4: Part of P. Lambert’s map showing the tanneries and the adjacent potters (Source: P. Lambert “Plan de la ville de Maroc (La Rouge)”, 1868; edited by V. Immervoll)

Jemma repeatedly emphasized the close technological, symbolic, and familial ties between tanners and potters. Even though by the time of her research, the old quarter (*ṭabḥirt*) of potters and brickworkers – once located just north of the tanneries – had already been relocated outside the city walls and later moved again across the *oued Issil*, into the area of the former cemetery known as *fekhara*. Still, she was able to identify important aspects of this interconnection (Jemma 1971, 89–90). A material trace of the link between tanners, potters, and brickmakers was uncovered during the excavation of a mill related to leather craft in February 2024. The object was a tripodal kiln furniture, used to support earthenware or other unfired ceramics during kiln loading (Reitmaier et al. 2024, 394). The historical connection between these crafts can be dated back to the 12th century (Wilbaux 2001, 218). Before turning to the French protectorate period, I would like to provide more biographical context on the above-mentioned O. Lenz, who is also referenced in the subchapter on crafting leather. The German-Austrian explorer of Africa, colonial cartographer, and geologist

O. Lenz led a trans-Sahara expedition³⁸ from Tangier, Morocco, to Saint-Louis, Senegal, between November 1879 and January 1880. This was his second expedition to Africa, funded by the “Afrikanische Gesellschaft in Deutschland”, with the primary aim of conducting geological studies of the regions he passed through. Lenz was a typical representative of late 19th- and early 20th-century German colonialism. His relationship with the German colonial lobby was ambivalent; he did not fully identify with colonial interests. Instead, he advocated mediation, but viewing colonialism as a European issue rather than one concerning the colonized. Nevertheless, during his expeditions, Lenz recorded geological, botanical, and ethnographic observations, which he later published in his book *Timbuktu. Reise durch Marokko, die Sahara und den Sudan* (1884) as well as in other popular scientific articles (Dedryvère et al. 2017, 49, 75–76). Some of the information from his book relating to leather craft is essential for this thesis, as will be shown later.

The French Protectorate Period (1912–1956)

Let us now move on with the French protectorate period in Morocco for which an overview of the key developments is outlined in the following section. The protectorate was formally established in 1912 with the Treaty of Fèz under Sultan ‘Abd al-Ḥafīz (r. 1908–1912) belonging to the ‘Alawi dynasty. Generally, a protectorate is a political arrangement in which a territory formally retains its sovereignty and its ruling institutions – in the case of Morocco the Sultan – but its foreign policy, military, and often key aspects of administration are controlled by a colonial power. The Treaty of Fèz placed most of the country under French control while Spain administered the north and parts of the south. Under Resident-General L. H. G. Lyautey (1854–1934), a new colonial administration was introduced, and over the following decades France consolidated its authority through pacification campaigns (1912–1930s), extending control into the mountains and Saharan fringes. Resistance persisted, most notably in the Rif War (1921–1926), in which French forces intervened alongside the Spanish (Miller 2013, 88–119). During the 1940s, Morocco’s strategic role grew during the

³⁸ During this expedition O. Lenz collected ethnographic objects which are now part of the collections at the Weltmuseum Wien. Among other things, he collected leather slippers (Inv.No. 12772), known as *babouches* (*darīja*: *belgha*). Usually, the sole is made of camel leather and the rest of goat leather. The red color indicates that the *babouches* were most likely made in Fèz. See <https://www.weltmuseumwien.at/object/?detailID=460784&offset=9&lv=list> (accessed 2025-08-28).

Second World War; the 1943 Anfa Conference in Casablanca, where Roosevelt and Churchill met, encouraged Moroccan nationalists to press their demands. These culminated in the 1944 Manifesto of Independence. When the French exiled Sultan Mohammed V (r. 1957–1961) in 1953, nationalist resistance intensified, and his triumphant return in 1955 symbolized the movement's success. In 1956, Morocco regained sovereignty, marking the end of the Protectorate (Miller 2013, 120–61). Economically, French rule transformed the country. Infrastructure was developed on an unprecedented scale, with new ports – most importantly Casablanca – alongside extensive railways and road networks, integrating Morocco into the colonial economy. Agriculture was reorganized through the expropriation of land for European settlers, who established large estates focused on cash crops such as wine, citrus, and cereals, often at the expense of Moroccan peasants. Urban centers like Casablanca and Rabat grew rapidly as administrative and industrial hubs. Resource extraction also intensified, particularly phosphate mining, which expanded under French management and made Morocco a major global supplier (Cohen and Jaidi 2006, XI–XV). Craft were also reshaped under the Protectorate. Lyautey promoted the “*protection des arts indigènes*” by founding vocational schools and workshops aimed at preserving traditional crafts such as ceramics³⁹, leatherwork, and textiles. Moreover, the Moroccan socially powerful guilds were structurally transformed to extend the influence and control of the protectorate on craftsmanship (Irbouh 2005, 33–37, 48–50). In Marrakech, several vocational schools were established. The French General Administration of Public Education, in collaboration with the Bureau of Political Affairs, created curricula to introduce modern techniques and hired trainers sympathetic to the colonial regime to maintain control over education. These schools reshaped the traditional system of knowledge transmission, in which not only craft skills but also social values and norms had long been passed from generation to generation. At the same time, colonial vocational schools sought to preserve the artistic tradition and “authenticity” of Moroccan crafts. The *École des Beaux-Arts de Casablanca*, founded in 1919, emerged in this colonial context (Irbouh 2005, 85–106, 222–25). While such policies and education ensured the survival of certain craft traditions, they also tended to freeze them into standardized, stereotypical forms intended for tourism and export rather than local consumption. Even before 1912, Moroccan crafts had already been integrated into colonial exhibition circuits and international markets, a process

³⁹ The chapter *The Double Bind of Craft Fidelity* (2022, 117–38) written by M. S. Graves provides interesting insights into influences of the French protectorate period on Moroccan pottery.

that the French continued and encouraged (see Mokhiber 2001). Research for this master thesis revealed that the influence of colonialism on Moroccan craftsmanship has not been sufficiently studied, leaving a gap that requires further investigation (Becker 2006, 6). For example, there was a vocational school for tanners in Fèz, where already established apprentices of leather craft were recruited to work in the school in order to transmit the craft in line with colonial ideology and concepts. To what extent apprentices agreed to this on a voluntary basis is not known (Irbouh 2005, 97–98). In relation to leather craftsmanship in Marrakech so far no clear evidence of the existence of a tanners vocational school could be found. However, it is reasonable to assume that the French sought to shape such an important economic sector, producing a relevant export good which was well-known and valued in Europe since centuries. This colonial intention is reflected in the numerous studies between 1912 and 1956 on Moroccan leather craft. All of them conducted by French scholars “[...] called ‘the eminent’ and ‘distinguished specialists’ [...]” (Irbouh 2005, 27) by the Protectorate Administration (e.g. Ziegler 1928; Le Tourneau and Paye 1935; Hardy 1938). Generally, those scholars offered specific information on social organization, ethnicity, class and gender among urban craftsmen/-women to strengthen the influence, especially inside the medinas where most of the workshops were located.

Key Developments after Independence (1956–until present day)

Since Morocco’s independence in 1956, the monarchy has been the central political force shaping the country’s trajectory. Under Mohammed V, independence was consolidated and nationalist parties were gradually sidelined as the king centralized power (Miller 2013, 151–61). The adoption of the 1962 constitution formally established Morocco as a constitutional monarchy, but with extensive prerogatives reserved for the crown. His successor, Hassan II (r. 1961–1999), ruled during what is often described as the “Years of Lead”, a period marked by authoritarianism, political repression, and the persecution of opposition movements including leftist groups, Amazigh activists, and Islamists. Morocco’s post-independence decades were initially marked by Arabization and the elevation of an Arab-Islamic identity, which relegated Amazigh heritage to the rural periphery and often stripped crafts of their regional or ethnic origins. Under Hassan II, Arabization was promoted in education and administration, further marginalizing Amazigh language and culture. In the field of crafts-

manship, the monarchy institutionalized heritage policies, establishing the *Maison de l'Artisan* in 1957 to promote crafts as part of Morocco's image abroad, though this often froze production into stereotypical "traditional" forms adapted to tourism following the colonial legacy of the French protectorate period (Nicholas 2014, 390–412). At the same time, the state implemented ambitious modernization policies. Economically, Morocco pursued modernization while grappling with structural inequalities inherited from the colonial period. Since 1976, Morocco also integrated the previous Spanish colony of Rio de Oro (West Sahara) into its territory – with ensuing consequences for its mineral but also its meat and leather resources. The state sought to reclaim control over key sectors such as phosphates, which soon became the backbone of the national economy and a major source of export revenue. Investment in infrastructure, urbanization, and industrialization was paired with agricultural reforms, though land redistribution remained limited and much of the rural population continued to experience poverty, fueling rural–urban migration and emigration to Europe. Tourism and handicrafts were promoted as symbols of national identity and as foreign currency earners, embedding Morocco into the global heritage and service economy. Over the last decades Morocco's economy became more liberalized and integrated into international markets, creating growth in cities while reinforcing regional and social disparities that continue to shape development today (see Cohen and Jaidi 2006). The reign of Mohammed VI (1999–present) has been marked by cautious liberalization and selective reforms. Under Mohammed VI, Morocco's 2004 reform of the *Moudawana* ("family code") raised the marriage age, curbed polygamy, and expanded women's rights in divorce, custody, and inheritance. In 2024, he launched a second wave of reforms further strengthening women's rights while keeping the framework within Islamic law. From the 1990s onward, Amazigh associations emerged as influential actors demanding linguistic and cultural recognition. His "new era" introduced steps toward human rights accountability and, importantly, toward acknowledging Morocco's cultural diversity. In 2001, the *Institut Royal de la Culture Amazighe* (IRCAM)⁴⁰ was founded to promote Amazigh language and research, standardize the Tifinagh script, and integrate Amazigh culture into public life. The 2011 constitution, passed during the Arab Spring, explicitly recognized Tamazight as an official language alongside Arabic – a landmark in Morocco's cultural politics. More broadly, the constitution inscribed Morocco's multifaceted heritage – Amazigh,

⁴⁰ For a brief overview of the history of Imazighen in Morocco until the 2000 see Saad 2000, 167–81.

Arab, Islamic, Andalusian, Jewish, and Saharan – into the national narrative (Miller 2013, 194–96, 221–36). Today, Amazigh identity is increasingly visible in public signage, media, and education. Traditional crafts are often associated and marketed with explicit Amazigh identities, even if these remain mediated by heritage and tourism frameworks. Nevertheless, the monarchy continues to dominate the political system, with parliament retaining limited power. Craftsmanship remains an area where politics, economy, culture, and identity intersect. Since independence, crafts have been tied to nation-building as emblems of Moroccan authenticity. Tourist hubs like Marrakech, Fèz, and Essaouira became central to the heritage economy, selling crafts as both exotic souvenirs and idealized symbols of tradition. This is mirrored institutionally through the *Ministère du Tourisme, de l'Artisanat et de l'Economie Sociale et Solidaire*, which oversees tourism, crafts, the social economy and solidarity together. UNESCO's recognition of Moroccan heritage, such as the inscription of Marrakech's medina in 1985, has further cemented this framing of “traditional” crafts while also helping preserve sites like the tannery quarter, which might otherwise have been relocated outside the city (see UNESCO 2025). Recognition for Moroccan leather craft has also come from within the Islamic world: in 2023, the Islamic World Educational, Scientific and Cultural Organization (ICESCO) – a counterpart to the strongly “Western”-influenced UNESCO – listed Moroccan leather craft as intangible heritage (ICESCO 2023, 9). In the contemporary period, some Moroccan crafts remain vital, supported by NGOs and state programs that encourage cooperatives and link craft to sustainable development agendas and Amazigh identity politics. Yet Marrakech's tanners face mounting challenges, from competition with cheap imports to the decline of apprenticeship, both of which threaten the continuity of their practices even as the craft is noticed as heritage in and beyond Moroccan society.



Fig. 5: “A la tannerie, Marrakech” (1980). Photo by F. Le Diascorn (Photo credit: Ministère de la Culture (France), Médiathèque du patrimoine et de la photographie (MPP), GrandPalaisRmn Photo)

Between Tradition and Modernity: Today's Leather Craft in Marrakech

The main part of this MA thesis is ethnographic in nature and divided into three chapters. The first chapter outlines the theoretical and methodological premises. The second chapter examines the contemporary situation of Marrakech's tanners in comparison with information out of Jemma's ethnography in relation to aspects such as social order, (ethnic) identity, and the tannery as space and place. The aim is to give broader insights into what has changed and what was continued in the social, cultural and economic context of the tanners to understand crafting leather as "social production" rather than an isolated phenomenon. The third and final chapter provides a detailed temporal comparison of goat, sheep, and cattle leather crafting, using the *chaîne opératoire* as analytical framework. Additionally, two short excursions on the second tannery quarter in Marrakech and mills in Moroccan leather craft are provided. The latter is seeking a synthesis between ethnographic, historic and archaeological data. The thesis concludes with a presentation of the research results.

Outline of Theoretical and Methodological Premises

Before continuing with the ethnographic comparison in relation to leather craft, I will outline the theoretical and methodological background of this master thesis. It is generally positioned between the subject fields of material culture studies⁴¹, economic anthropology and the anthropology of technology but is intended to contribute towards an anthropology of crafts (see Greiner and Pröpper 2016). An anthropology of crafts, however, does not yet really exist within social and cultural anthropology: this is somewhat surprising as material culture and in specific crafted objects have long been in focus since the discipline's institutional emergence at the beginning of the 20th century (Hahn 2017, 281–96). By contrast, the study of crafts has long occupied a marginal place in socio-cultural anthropology's conceptualizations and related theorizing. There exists still no conceptual overview that maps out the contours of an anthropological approach to crafts or to the manual production of objects.

This absence is all the more striking given that some anthropologists (see e.g. Epstein 1967, based on "Manchester School") once described the very practice of an-

⁴¹ Hicks and Beaudry give in their introduction of *The Oxford Handbook of Material Culture Studies* (2010, xviii–21) an interesting overview of developments and approaches in the intersection of socio-cultural anthropology and archaeology.

thropology as a craft and highlighted the parallels between anthropology's core method of participant observation and apprenticeship training in crafts (see e.g. Coy 1989, 115–35). Both fieldwork and craft apprenticeship may be seen as classic examples of *rites de passage*, which was to a certain extent experienced by myself during fieldwork among the tanners of Marrakech (see Lave 2011). Because crafts are simultaneously global and local, it seems somehow self-understood for anthropologists to investigate and document the cultural and social dimensions of craftsmanship but most of the studies remain partial, fragments of a much larger, unfinished mosaic. What is still lacking is a holistic anthropology of crafts, one that captures craft cultures as living, open and interconnected processual entities. Some aspects of crafts or craftsmanship are taken up within established subfields of socio-cultural anthropology – most notably material culture studies, the anthropologies of body and labor as well as educational anthropology. Strikingly, however, knowledge of crafts remains absent from many others. To this day, it receives little to no sustained attention for instance in mainstream economic anthropology, in the anthropology of art, or even in the above-mentioned anthropology of technology⁴² (Greiner and Pröpper 2016, 210–12; DeNicola and Wilkinson-Weber 2016, 2–5). I proceed with presenting the theoretical concept providing for a more holistic approach to understanding the diverse aspects of craftsmanship. In a conceptual and theoretical sense, this text combines such approaches that relate to the subject fields previously indicated. Hence the theoretical premises of this work are inspired by theories in the anthropology of technology and economy, and combine them with theoretical approaches derived from the anthropology of the body and of work.

The technological and economic dimension is inspired by the work of P. Lemonnier, a former research assistant to M. Godelier. In general, Lemonnier's work is broadly based in non-dogmatic European neo-Marxist legacies within socio-cultural anthropology, situating crafts as a version of producing objects for circulation as commodities or otherwise. Simultaneously such a circulation-oriented approach considers the “embeddedness” of the technology and the related economic sector oriented towards circulation – inside or outside of markets – within wider rural and urban society and economy in past and present. Through this emphasis on the embeddedness of particular production and circulation sectors, approaches like this by Lemonnier display strong intersections with the “substantivist” school in economic anthropology as well.

⁴² For an overview of historic developments and the current state in the anthropology of technology see Bruun and Wahlberg 2022, 1–33.

In *Elements for an Anthropology of Technology* (1992) P. Lemonnier seeks to emphasize that technology can be studied as a “social production”, not separated from culture and society. Lemonnier’s publication draws back on the legacies of A. Leroi-Gourhan, M. Mauss, B. Gilles and A.-G. Haudricourt (Ellen 1994, 652). Important for this thesis is that he defines technological choices as the decisions made at every stage of a *chaîne opératoire* (CO), from the selection of raw materials, tools, and methods to the organization of labor, timing of operations, and disposal of waste etc. Moreover, Lemonnier (1992, 79–103) emphasizes that technological choices within craft processes operate on both conscious and unconscious levels. On the one hand, craftspeople make deliberate, articulated decisions about materials, tools, and sequences – choices they can justify or explain. On the other hand, much of their practice rests on ingrained bodily gestures and routines acquired through apprenticeship, often invisible even to the craftspeople themselves. Importantly, these two dimensions overlap: when a new tool is introduced, for instance, it may be consciously adopted yet integrated seamlessly into pre-existing, unconscious workflows. In this way, (un-)conscious technological choices shape the process of crafting leather. Due to the scope of this master thesis not all the technological choices within the CO of crafting leather can be thematized. Furthermore, I argue that behind every technological choice lies an agency which can be either individual or collective (Burke and Spencer-Wood 2019, 225–87). These two forms of agency can interact with each other in a process of decision making, resulting in (un-)conscious technological choices. Both forms of agency, individual and communal are influenced by a context formed through several factors which are entangled with each other (illustrated in Fig. 6 by double headed arrows). These factors may vary depending on the craft(s) studied. The following factors could be identified throughout the research for this master thesis: processes of globalization, particularly the dynamics of international surplus markets and the phenomenon of tourism; religion, with Islam playing a central role in Morocco; and space/place, such as the tanneries and the tannery quartier within the city of Marrakech. The environment is also crucial and can be subdivided into infrastructure, including for instance the water supply system, climate, expressed in the alternation of summer and winter seasons, and the natural resources used in crafting leather. Social structures further impact the context behind the agency, encompassing the community of tanners, tribal networks, and related hierarchies. The political system, in which governmental institutions and policies play a role, alongside (ethnic)

identity as well as (tacit) knowledge and skills transmitted through apprenticeship or other forms of learning. Finally, the broader economic conditions and the legacy of colonialism, in particular the influences from the former French protectorate in Morocco have to be considered. The context based on these various factors impacts the agency behind (un-)conscious technological choices and influence crafting leather what leads in the end to continuities and changes.

The second set of concepts inspiring the theoretical premises of this master thesis comes from the anthropology of the body and of work. In this regard, key influences by British social anthropologist T. H. J. Marchand have become relevant for this analysis. Marchand defines craft(s) as “[...] professional kind of work or trade or a pastime activity, any of which centrally involves specialized skills. Such skills are popularly associated with the work of the hand and conceived as being carried out on particular (often natural) materials with a kit of dedicated tools. As a transitive verb, ‘to craft something’ implies making in a skilful manner: a well-crafted chair, inlaid box, or embroidered wall-hanging, for example.” (Marchand 2016, 3). Applying Marchand’s definition, leather craft can be understood as a professional occupation that centrally involves specialized skills in transforming animal skins into leather in a skillful manner. These skills are popularly associated with manual work, carried out on a natural material – in our case animal raw skins – through the use of a dedicated set of techniques and tools. He further points out that craft should be acknowledged – like ethnicity – as a polythetic category based on different attributes (Marchand 2016, 8–9; see also 2022, 8–9). In line with Marchand’s argument that craft constitutes a polythetic category, leather craft cannot be reduced to a single, static definition. Rather, it is characterized by a constellation of overlapping attributes, not all of which necessarily apply to other crafts as well. The leather craft in Morocco requires manual skill and dexterity in transforming animal skins to leather based on an understanding of its materiality what gets accomplished with a set of dedicated tools and equipment and is sustained by (tacit) knowledge and skills passed down mainly through apprenticeships within family, community structures and/or governmental institutions. The crafting process is time-intensive, involving several different stages such as liming, bating, bran drenching or tanning which demand patience and careful sequencing. At each step, the craftspeople rely on tacit sensory judgment assessing the readiness of leather by touch, smell, or appearance. Beyond technique, Moroccan leather craft is also deeply culturally embedded, as leather itself and its goods have long carried

symbolic and social value. Finally, leather craft provides tanners with a distinct professional identity marking their social role and status while linking their livelihoods to Morocco's economy and cultural heritage. The illustration in Fig. 6 shows the theoretical concept for this master thesis in which technological choices are central behind the process of crafting leather. Taken together, this combination of approaches from the anthropology of technology and economy (Lemonnier) with others from the anthropology of body and of work (Marchand) define the conceptual and theoretical premises of this study. Even though these conceptual and theoretical premises may appear as fragmentary, they are intended to represent a flexible approach which can be adapted and extended if the object of study requires. Moreover, this serves as a middle-range theoretical line of orientation grounded in empirical evidence instead of striving for any universal laws (Gingrich 2012, 20–21).

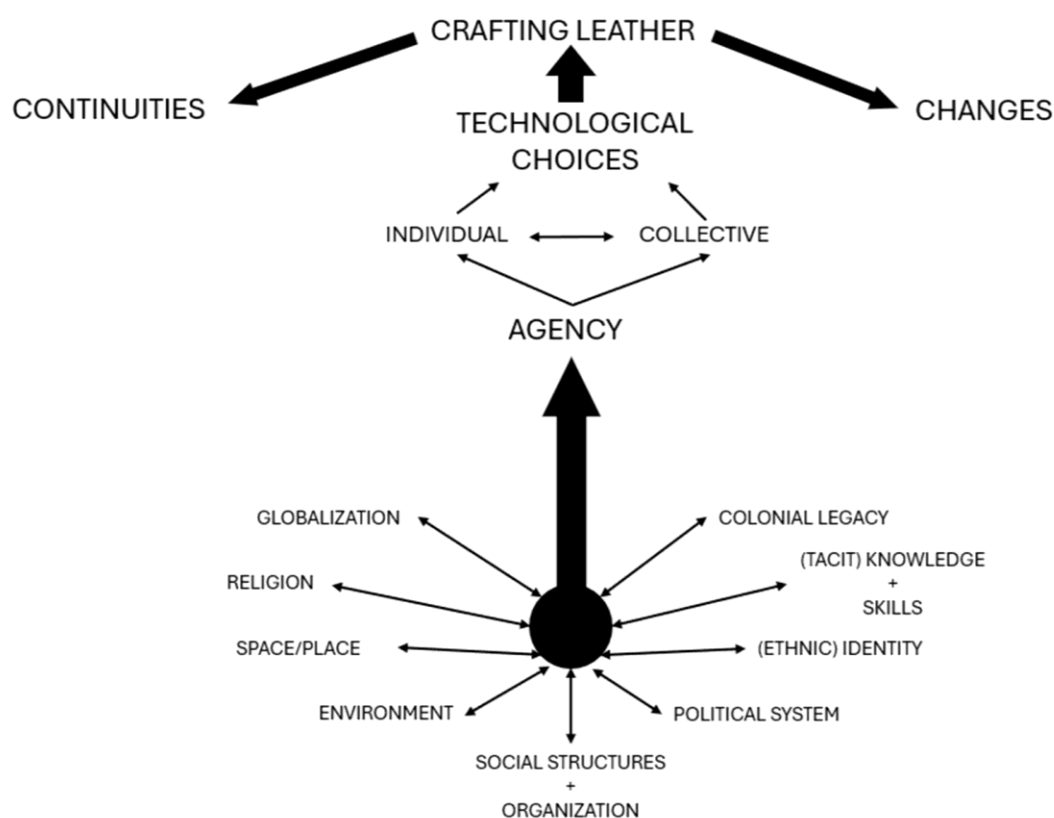


Fig. 6: Illustration of theoretical concept (created by V. Immervoll, August 2025)

When it comes to ethnographic comparison there are a variety of practices which have been used within anthropology and being in tension with particularistic or generalizing approaches since the beginning of the discipline. Neither particularities nor

generalizations are helpful in understanding processes or phenomena within a modern globalized world: It is more about to find a “[...] balance between the two [...] if anthropology is to retain and enhance its standing among other disciplines.” (Schnegg and Lowe 2020, 3). Ethnographic comparison has the potential to highlight and create an understanding of differences and similarities of the world human beings inhabit and transform. As “the backbone of the discipline” (Gingrich and Fox 2002, i) comparison also contributes to answering today’s pressing questions. The rediscovery of comparison within anthropology also has led to a strengthening of pluralist approaches whereby five are widely applied: binary, regional, temporal, distant and fluid comparison. For this master thesis a temporal comparison is applied which generally involves relating examples from different points along a timeline while maintaining geographical locations constant (Gingrich 2015, 412–13). Its primary aim is to “[...] understand the phenomenon given historical and social-cultural context and to contribute to theoretical models that explain the reasons for change and stasis in phenomena over time.” (Schnegg and Lowe 2020, 12). Temporal comparison is not unique to anthropology, it is also widely in use within other disciplines like history and archaeology which simultaneously may inform or complement the anthropological (temporal) comparison (Gingrich 2015, 413).

Let me briefly answer the question how I theoretically proceed with the comparative research for this master thesis based on the information given by M. Schnegg and E. D. Lowe (2020, 9–10). There is broad, though often implicit, agreement on the steps involved in comparative ethnographic research. The process typically begins with identifying a theoretically or socially relevant category of phenomena and formulating research questions that warrant a comparative approach. Then researchers select a small number of comparable cases – usually between two and twenty – ensuring that all cases fall within the same empirically meaningful category. In this master thesis this is achieved by focusing on the phenomenon of crafting leather among the community of Marrakech’s tanners in the early twenties of this century, and questioning what continuities and changes can be identified in comparison to D. Jemma’s ethnography of 1971. Therefore, the ethnographic descriptions or qualitative data found in Jemma’s ethnography about the leather craft in Marrakech is compared with qualitative data collected by the author in the same geographical location 65 years later. Hence an analytic framework needs to be developed to define the categories of in-

terest, often alongside specific empirical criteria for the case study. These tools may be established prior to fieldwork or refined during the course of the study.

Before starting with the fieldwork for this master thesis it was decided to use the *chaîne opératoire* (CO) as analytical framework for which a basic definition was given further above, at the end of the chapter thematizing the work and life of the ethnologist D. Jemma. She had presented in her ethnography only two tabular COs for crafting goat and sheep leather but unfortunately not for the production of cattle leather (see Jemma 1971, Appendix). Therefore, a comparison in the strict sense is only possible for crafting goat/sheep leather. A translation of the ethnologist's CO from French to English is added in Appendix A at the end of this master thesis. To ensure that the same empirical categories are used and compared in the end, the CO developed in this thesis has the same empirical categories as Jemma's CO. These are stage, work step, operations, place, products (named ingredients in my CO), tools, gestures and obtained results. Based on the empirical data collected during the fieldwork in 2023/24 more categories could be identified, extending the developed CO with further empirical categories as infrastructure, workforce, durations of certain operations carried out, colors and leftovers. Relating to some of these new categories, additional information is provided in the descriptions in the text of Jemma's ethnography but not in her tabular CO. Therefore, this information can be added to, and included in the comparison. In the end all the empirical data structured in the CO are visualized in a tabular form. On the tabular basis a graph was also created to illustrate the crafting process of leather in a more simplistic way (see page 70, Fig. 13). Furthermore, a CO using the same, above-mentioned categories was developed for crafting cattle leather. On the one hand, to fill the information gap of Jemma's ethnography and, on the other hand, to ensure that in the future a temporal comparison of all three types of leather is possible by using the analytical framework of the *chaîne opératoire*. This concluded the outline of theoretical and methodological orientations that are relevant for the present study.

The Tanners of Marrakech

With a deep breath full of Marrakech's dry, dusty air, I step onto the street and make my way to the tannery quarter. Even though it is still early in the morning, the air already tells me it will be a hot day – sunny, like most days. Wandering around with headphones for listening to music makes no sense here. It's far too (life-)important to notice the mopeds rushing toward you from both behind and in front. Many people are already on the move. Some are taking their children to school, others are doing their groceries, and some are eating a bowl ḥrīra before going to work. Sometimes a moped passes me carrying an entire family including two children, which never ceases to amaze me. I quickly turn the corner onto Derb Bāb El-Khemis, which leads up to the northern city gate of the same name – a street that is more a narrow alley paved with cobblestones and full of lively happenings. Along the way, there are many small ḥwanet selling meat, dates, nuts, sweets or a laundry shop next to a school supplies seller. Some women prepare fresh msmen on a pan over a gas bottle – small, airy pancakes often eaten with honey or jam for breakfast. Street vendors line the path, selling everything from single cigarettes (different brands available for just a few dirhams – ideal for a needed situational smoke!) to recycled household items. Children sneak through them returning from the bakery in one of the side alleys with plastic bags full of khobz and their pockets, for sure, filled with sweet treats. Abruptly I stop at a man who has spread fresh herbs from mint to verbena on the ground. I rifle through the bundles until I find a fresh n'na', which I take with me for the tea break with the tanners. Just before I'm about to turn onto the main street of the tannery quarter – Derb Bāb Dbbāgh – I decide to get some oranges to bring something sweet and juicy to make the heat more bearable for all of us in the tannery today. I keep going straight, past an old man from whom I always get eggs on my way home. He spots me in the crowd and greets me with a warm smile, which I return with a friendly nod and my right hand over my heart. A wonderful gesture, so versatile in many situations! Now and then, the old man has invited me to drink atāy with him in the shade of his awning made of plastic tarps which is always a welcome pause after exhausting days in the field. It's a moment of peace from the hustle and bustle, combined with a pleasant chat before I continue home with the (best!) eggs in a lovingly crafted carrying device. Back to my limūn mission for which I head into the Mukhtaf quarter. One of the poorer neighborhoods in the medina, often labeled a "problem area", though I absolutely cannot confirm such prejudice from my own experience. There is a small square here where I usually do my groceries. Once a week, the square is filled with vendors from the countryside or coast selling fruit, vegetables, fish, spices, herbs, basically everything you need for a proper meal. I randomly meet tanners here doing their groceries, and we greet each other from afar with a brief smile and the right hand over the heart, not to attract too much attention in public. I quickly got used to the different rules of behavior and interaction in public and private spaces, even though this act was not always easy. My steps lead me to a fruit vendor where I spot some fresh-looking oranges. I take one in my hand, feel and smell it. The seller hands me a plastic basket to put in more, I give it back so he can weigh the oranges. After paying I finally make my way to the tannery. From the small sūq in Mukhtaf, there is a shortcut into the tanners' quarter that I take to avoid the overcrowded Derb

Bāb El-Khemis. After a few minutes, I reach Derb Bāb Dbāgh – feeling the sun’s scorching heat on my face. Turning left, I pass the entrance of a small tannery. In front of it a few young men stand with mint bundles in their hands ready for picking up tourists. Most of them learned the leather craft, but the income from offering illegal tours is more lucrative than the hard physical labor as a tanner. The mint is for tourists to make the smell of dead animals and pigeon droppings more bearable. At the end of this street stands the eastern city gate Bāb Dbāgh, a brick structure and material trace from the earliest period of the city. I always feel wistful when I see the earthquake damage on the gate as I’m aware of its historical and cultural value and how urgently it needs restoration to avoid further damage caused by Marrakech’s harsh, dry climate. That wistfulness fades as I turn into Derb Soussane and feel the joy of the day ahead in the tannery. I pass the house of the young tanner Abdellah and his wife Zayneb. An old house where I often stop by to spend time with Zayneb, their three children, the father of Abdellah and (very) often other relatives. Sometimes Abdellah sits alone behind the slightly open front door with a glass of tea in one hand and a hashish cigarette in the other. Through the door crack he perfectly can observe the street. When our eyes meet, we share a mischievous smile, or he waves me in to join him for tea. He reminds me of some men in Austria who retreat in their garages or hobby rooms in the basement to escape daily family life for a bit. Abdellah has found his personal retreat in the two-square-meter entrance room of the house. I appreciate that he allowed me into his space where we had many pleasant personal conversations. He is probably already at work in the tannery. Alright, I need to focus. Who will be working today? Which steps of the process will I be able to observe? Will Moha dehair his cattle skins today? Oh, and I must remember to ask Hassan what happened at the sūq last Saturday as he ended up not buying any raw skins? These thoughts go through my mind as I pass one of the hammam in the neighborhood. I stop in front of a low wooden gate that leads into the tannery, stacked raw skins on the left and right side. I inhale the air, which is olfactorily challenging for some people, yet already so familiar to me and associated with a sense of home before entering the tannery to begin another day of fieldwork among the tanners of Marrakech. (Author’s fieldnotes, 2024)

It is precisely this tannery, generally referred to as *dār dbāgh* (house of tanning) in this thesis, that I would like to guide the reader into. This place is not only a workplace or production site for leather, but also a social space brought to life, transformed, and sustained by the community of tanners and their multifaceted identities. *dār dbāgh* is one of the oldest among 20 still-active, mostly small-scale tanneries in the eastern part of Marrakech’s medina. A second tannery quarter existed as well in the North of Marrakech’s medina which is briefly discussed in an excursus at the end of this chapter. In the Eastern medina part, there were around 40 tanneries but half have disappeared, and in most cases their structures have completely vanished since the 1960s (Jemma 1971, 69). Generally, *dār dbāgh* is a strictly male-dominated space, where the presence of any other woman besides the researcher does not occur. The tanners at *dār dbāgh* know most of their colleagues in other small-scale tan-

neries, some of whom are relatives – mostly cousins – and/or members of the same tribe. Today, most tanners and their families no longer live in the tannery quarter. Instead, they have moved outside the medina to other parts of the city or to new government-built settlements near Marrakech. To reach their workplaces, they usually travel by bicycle, moped, or shared taxi, as public bus connections are irregular. Within the medina, all sites linked to leather craft (e.g. markets, drying place) are within walking distance, though bicycles are sometimes used to move more quickly between them. The main reasons for leaving the quarter are rising rents in the medina and concerns about family safety, since the tannery quarter, together with the *Mukhtaf*, is considered an unsafe area by the tanners. Moreover, tourism has driven up rents inside the medina, as many hotels and guesthouses have been established and old *riaḍs* sold to international investors. While this preserves historic houses, it simultaneously reduces living space for the local population, increasingly forcing them to relocate outside the old city. The quarter itself is centered along its main street, *Derb Bāb Dbbāgh*, where many everyday services are found: a bakery, a butcher, a tailor, small grocery shops, a women's beauty salon with covered doors, a carpenter, a barber, and a café where tanners occasionally gather. A health care center is also under construction to improve medical access, though it remained unfinished during my last visit in December 2024. The quarter has been adapted not only to the needs of local residents and leather craft but also increasingly to those of tourism. The main street has been renovated in recent years, and space created for shops selling leather products. Other craftsmen have also settled in the quarter, such as lamp makers producing the globally known *fanoos*⁴³. Another notable feature of the quarter is its many specialized small shops named *ḥwanet* (sing. *ḥānūt/tashelhit: aḥanut*), where tanners buy materials and chemicals for crafting leather. Materials are sold in plastic bags, while liquid chemicals such as acids or industrial dyes are bottled in smaller quantities. These shops also sell shampoos and soaps in small portions to the tanners. Inside the *ḥwanet*, the smell of chemicals lingers in the air, often causing a sharp, penetrating feeling in the lungs. In one of these shops, archaeologists from T. Reitmaier's team discovered and documented an old mill connected to the leather craft – but more on that later. In addition to *ḥwanet* relevant to leather craft, the quar-

⁴³ The term *fanoos* refers to lanterns or lamps which are made for *Ramaḍān* celebrations, and their origin is suspected in Egypt. Meanwhile they get crafted in different shapes and designs to sell them further to tourists during the rest of the year.

ter also contains two public baths (*hmmam*) and an elementary school at *Derb Sous-sane*.

Along *Derb Bāb Dbāgh*, many small food spots sell *lūbiya*, sometimes accompanied by chicken (*djāj*). *Lūbiya* is a stew of white beans slowly cooked in pots and eaten with bread (*khobz*⁴⁴). It is an essential and affordable meal for tanners, costing 10–20 Moroccan dirhams (DH) and typically eaten at lunchtime with sweetened mint tea (*atāy*). During fieldwork, I counted more than fifteen *lūbiya* spots in the quarter, highlighting its importance for the workers. Some even have direct service windows opening into the tanneries, allowing tanners to pick up their meal without leaving their workplace. As *lūbiya* is one of my favorite Moroccan dishes, it became something of a ritual that the tanners of *dār dbāgh* invited me to share a meal at one of these food spots whenever I returned for a new fieldwork stay. Just a few days before the pilot study began in September 2023, a 6.9-magnitude earthquake struck the city. Its epicenter was about 70 kilometers southwest of Marrakech in the Al Haouz region of the Atlas Mountains, between Marrakech and Taroudant. The disaster killed more than 2,900 people and left many more injured and homeless. Severe damage occurred in Marrakech's medina and in the tannery quarter, where many tanners and their families lost their homes. Even before the earthquake, during my first walk through the quarter in May 2023, it was evident that many old houses in the side streets required renovation. Since the earthquake, the situation has worsened: many collapsed houses in the neighborhood's remote corners have neither been cleared nor rebuilt, as I observed and documented throughout my field stays (see Fig. 7). Visits to smaller tanneries off the main street also revealed significant damage to buildings essential for leather craft. At *dār dbāgh*, one of the two wells was destroyed, impacting the water supply system for leather production. Other buildings or structures in the tannery sustained only minor damage, such as cracks in workshop walls. Nevertheless, some of the tanners and their families lost their homes. Most family members found temporary accommodation with relatives, while some affected tanners moved into abandoned workshops or other spaces inside *dār dbāgh* to continue their daily work. Financial support from the Moroccan government was received but was far from sufficient to rebuild homes – a fact that caused deep frustration among the tanners. Fortunately, I survived the earthquake without serious injuries, as I had arrived in Marra-

⁴⁴ Usually, Moroccan women prepare a home-made dough for *khobz* which is then brought to a public bread baking oven, which can be found in each neighborhood of the medina. During the field research I got the chance to visit one out of two public bread baking ovens in the tannery quarter.

kech exactly on that day⁴⁵. As tragic as it was, the earthquake as a “shared experience” became a starting point to connect with the tanners at *dār dbāgh* for gaining field access.



Fig. 7: a) Earthquake damages in the tannery quarter (Photo: V. Immervoll, Marrakech, September 2023); b) Earthquake damages on Bāb Dbbāgh (Photo: V. Immervoll, Marrakech, February 2024)

Social Context, (Ethnic) Identity and Knowledge Transmission

Let us now take a closer look at the community of tanners, focusing on how they are socially structured and organized, how their (ethnic) identity is composed and (tacit) knowledge and skills are transmitted to younger generations. The community can be divided into three age groups: the oldest generation, ranging from about 45 to 65 years and forming the majority of tanners; a middle or “in-between” generation, aged 30 to 45; and the youngest generation, between 20 and 30 years old. The internal social order among tanners is strictly hierarchical, a structure common in Moroccan crafts that has persisted from pre-protectorate times through the 1960s and continues to this day (Rene-Leclerc 1905, 173; Jemma 1971, 79–80). At the top are the master craftsmen, called *m'ellem dyāl jeld* (pl. *m'ellemen dyāl jeld*). At *dār dbāgh*, the

⁴⁵ I would like to express my heartfelt gratitude to Abdellah Benalla, who cared for us so warmly during this difficult time and Thomas Reitmaier who provided us a safe home after the earthquake, since both Hicham Rafik and I had to leave our rented accommodations due to serious damage.

m'ellemen jointly own the tannery, while in Marrakech other tanneries are either state-owned or belong to a single owner, referred to by the tanners with the French term *patron*. In the 1960s, many of these patrons were members of the Amazigh tribe *Ida ou Zeddout*, but today ethnic background plays a less central role (Jemma 1971, 63). When a tannery is owned by a single *m'ellem*, he typically employs other tanners but no longer works directly in the craft. State-owned tanneries, in contrast, are meant to provide employment opportunities, especially for younger Moroccan men. In a tannery with shared ownership, there are several independent workshops, each inherited and owned by a *m'ellem*. Ownership of a workshop and vats is usually passed from father to eldest son. If a father has several sons and more vats than needed for leather production, the vats are divided among the sons, while workshops always go to the eldest son. The responsibilities of a *m'ellem* include supervising the production process and deciding the next steps for the skins, based on various parameters, to ensure – ideally – a high-quality product. Most technological choices regarding specific work stages are made by a *m'ellem* according to his individual agency, but always in dialogue with the collective agency of the tanners' community to account for shared needs. He is also responsible for procuring materials and for instructing and paying co-workers and apprentices. Below the master is the *m'tellem*, a term that generally denotes an apprentice. A distinction is made between a pre-apprentice, who has just begun learning the craft, and a post-apprentice, who has completed his training. A post-apprentice may buy or rent a workshop, allowing him to define himself as a *m'ellem* (Samlak 2019, 308). This is one example on how the social hierarchy among craftsmen is intertwined with place and space, both of which shape leather craft. In this thesis, I define post-apprentices as co-workers, since their training is already complete, and to distinguish them more clearly from apprentices. The term *m'tellem* is therefore used to refer simultaneously to both apprentices and co-workers. A *m'tellem* may work alongside with a *m'ellem*, a co-worker, or an already more experienced apprentice. All these variations are important for the self-understood, non-explicit transmission of (tacit) knowledge and skills in leather craft, which will be discussed further below. Co-workers are familiar with every stage of production, sometimes across all three types of leather, which gives them flexibility in work opportunities. If a *m'ellem* producing cattle leather has no work for a *m'tellem*, the latter can instead work for a *m'ellem* specializing in goat or sheep leather. Some co-workers specialize in using the knife-like tool called *sedriya* for postprocessing

tanned skins. In most cases, the tool is owned by the specialized co-worker himself and even taken home at the end of the day. This means he must maintain his *sedriya* and ensure it functions properly for his work. If the tool's metal part needs repair, the tanners take it to a trusted blacksmith located near *Bāb Doukkala* in the Northwestern part of the medina. This specialization grants the co-worker a more secure position within the social hierarchy and the possibility of earning a higher pay. The *m'tellem* are paid at the end of each workday by the *m'ellem*, usually 20 DH per skin, or 30 DH in the case of a specialized co-worker. Interestingly, it is not common for a *m'ellem* to count the number of processed skins or check the quality of the work carried out by a co-worker. Payment is based on trust between master and co-worker, reflecting the close social ties among the tanners and confidence in a co-worker's skills. At the bottom of the social hierarchy are the *ṣān'*, day laborers who specialize in a single stage of production (e.g., fleshing). They often come from other regions of Morocco, such as Meknès, representing a vivid example of a still existing and actively practiced form of inter-urban labor migration within Moroccan leather craft. Regarding the tanneries in Fèz, Le Tourneau and Paye (1935, 225) observed that these workers often originally came from cities such as Marrakech and Demnate⁴⁶ to work temporarily in the tanneries, or even stayed permanently after starting families. The *ṣān'* have been observed not only at *dār dbāgh* but also in tanneries in Marrakech, consistently performing the same work stage with the same techniques and tools. Unlike experienced co-workers, a master regularly inspects the work of the *ṣān'* during and after they handle the skins, before paying them per piece at the end of the task. Having spent time with the tanners before and during *Ramaḍān*, I gained insight into how this religious month of fasting influences leather crafting. It is very common for a *m'ellem* to hire day laborers in the weeks leading up to *Ramaḍān*. Additional help is needed, as the *m'ellem* ensures that certain work stages and operations – such as dehairing and fleshing – are completed before the month of fasting begins. Another effect is the reduction of the general workload for both the *m'ellem* and the *m'tellem*, giving them time to visit relatives for a few days – some of whom live in their hometowns near Taroudant. If a *m'ellem* is away for a few days, a trusted and experienced co-worker

⁴⁶ From April to May 2023, I carried out a small study on rural pottery production in the area around Demnate. During this stay, locals told me of a former tannery in the city's medina, which is no longer active. According to these accounts, the tannery once belonged to the *Ishelḥin*. The existence of a tannery in Demnate is also noted by Le Tourneau and Paye (1935, 225) as well as Jemma (1971, 25). The historical connection between leather craft in Demnate and Marrakech, and the possible relationships with potters would require further research.

is instructed and takes responsibility for the skins. Equally important is reducing physical labor during the day, since drinking, eating, or smoking is not permitted until sunset, which allows for more and longer breaks between work operations. Even though physically demanding work is somewhat reduced during *Ramaḍān*, most tanners still perform certain operations nearly every day. Considering that *Ramaḍān* in March 2024 coincided with extremely high temperatures – ranging from 30 to 35°C – this endurance is impressive.

Collectively, the tanners of Marrakech are organized either in cooperatives and/or associations, and in some tanneries the distinction between the two becomes blurred. Cooperatives represent a more informal, practical form of collective organization that includes both *m'ellem* and *m'tellem*. This form of organization is often found in tanneries with joint ownership shared by different *m'ellemen* and sometimes extends to other communities of tanners across Marrakech. Factors contributing to the formation of a cooperative include shared identity as craftsmen, common economic interests, collective ownership, solidarity, and external recognition. Collective ownership, in particular, strengthens social ties within a cooperative, as each *m'ellem* has an equal voice and certain decisions are made jointly – though without the participation of the *m'tellem*. While their needs are taken into account, the *m'tellem* are not socially equal to the *m'ellemen* and therefore have no vote. This shows how the hierarchical social order influences this form of collective organization. Specific decisions, such as those relating to the tannery as a space/place, are made collectively within the cooperative. At the same time, cooperatives depend on social solidarity and mutual aid, offering support in times of hardship – as in the case of tanners affected by the earthquake, when the community collectively decided that these tanners could temporarily use parts of the tannery as living space. In addition to the hierarchical social structure, a cooperative also strongly influences certain work stages and operations (e.g., purchasing materials, sharing infrastructure or equipment). Within the framework of this thesis, the cooperative constitutes the collective agency.

Associations, by contrast, are more external and formalized, resembling guild-like structures. They are based on a combination of shared identity aspects such as craft knowledge and skills, economic interests, and specific rules and norms. “Membership” was, and still is, tied to the status of *m'ellem*. Associations also defend collective economic interests by, for example, negotiating access to materials and their prices. In the past, associations were more firmly based on kinship, tribal, and re-

gional ties that reinforced cohesion, while religious practices – such as devotion to local saints – provided a moral and symbolic framework for unity (Jemma 1971, 23–26). The legitimacy of the association ultimately depended on recognition by governmental and municipal authorities, as both institutions regulated and relied on the organization of leather craft through associations.

Above these two forms of social organization stands the *amīn*, the “head of the craft”, appointed by members of the Chamber of Crafts, a sub-institution of the *Ministère du Tourisme, de l’Artisanat et de l’Economie Sociale et Solidaire*. Together, the ministry and the Chamber of Crafts oversee Morocco’s crafts sector, implement governmental policies, and regulate taxation. In the case of leather craft in Marrakech, this means that when new policies concerning the tanneries are decided by the Chamber of Crafts, they are communicated and enforced by the *amīn* in a top-down manner – often generating conflict. The tanners in Marrakech view both the Chamber of Crafts and the *amīn* with strong criticism. In conversations about leather craft organization, they frequently complained that this top-down decision-making addresses neither the actual needs of the craft as a whole nor those of the tanners in particular. According to the tanners, the issue lies in how an *amīn* is appointed today – by the Chamber of Crafts in cooperation with the city’s municipality. Typically, an *amīn* is no longer a *m’ellem*, not directly involved in the craft, and therefore lacks an understanding of the collective and individual needs of the craftspeople. In pre-protectorate times, however, the *amīn* was elected as a representative by the *m’ellemen* from among the master craftsmen. At that time, in the case of leather craft, the *amīn* acted as mediator between the tanners and the *muhtasib* (market inspector) or the *makhzan* (royal administration), transmitting official decrees, overseeing taxation, and safeguarding the craft’s collective interests (Lambert 1868a, 435; Lenz 1884, 256). The position combined economic, judicial, and moral functions: the *amīn* embodied the solidarity of the group but also its accountability to external and state institutions. The method of electing an *amīn* changed during the French protectorate, turning him into a “colonial assistant”. The colonial administration’s aim was to consolidate their influence and power by gaining insights into developments within (tribal) crafts (Irbouh 2005, 37–44). This colonial legacy has persisted in post-protectorate transformations up to the present day. Nevertheless, the *amīn* remains a key figure in Morocco’s craft organization, even though conflicts with the tanners occur frequently.

In the case of *dār dbāgh*, both of the above-mentioned forms of collective social organization overlap. Externally, the community is recognized as an association also by legal institutions, but its decisions are based on the needs of the cooperative – that is, the community of tanners. Belonging to the community does not depend on whether a tanner specializes in a certain type of leather. A tanner from the “in-between” generation also serves as spokesperson for the community, mediating between the tanners and external actors. This spokesperson is himself a *m’ellem* and negotiates or discusses certain interests with the *amīn* on behalf of the other cooperative members. He also assists the older generation of tanners with formal and bureaucratic matters – for example, helping with municipal water bills, filling out applications for government financial support, and accompanying tanners to official appointments when needed. The spokesperson holds this role because, first, as a *m’ellem* he has an equal social position with the other *m’ellemen*, based on trust as well as strong ties with the younger generation of tanners. Second, he possesses skills such as reading and writing – something not guaranteed among the older generation – as well as experience in handling official and institutional matters.

Turning now to (ethnic) identity among Marrakech’s tanners: In Jemma’s 1971 ethnography, a sharp distinction is drawn between tanners of “Berber” and “Arab” origin. The former were linked to the crafting of cattle and camel leather, while the latter were associated with goat and sheep leather. Those working with cattle leather were predominantly of Amazigh origin, belonging to the *Ida ou Zeddout* tribe⁴⁷, regionally connected to Taroudant and the Sous Valley (Jemma 1971, 24–26, 69). The tribe is part of the Amazigh group of *Ishelḥin* (in *darīja* they are named pl. *chluḥ* and sing. *chleḥ*), whose primary language is the Tamazight dialect *tashelhit*. The *Ishelḥin* are not only a linguistic group but also a sociocultural one, forming one of the three main sub-groups of the Imazighen in Morocco (Hoffman 2007, 13–22). Their linguistic ties to *tashelhit* and tribal affiliation once fostered a strong sense of identity and cohesion within leather craft – a factor that has diminished today. “Arabs” by contrast, were known for crafting goat and sheep leather, as at *dār dbāgh kbīra* during Jemma’s research (Jemma 1971, 70). The “Berber”/“Arab” distinction is an ethnic classification with roots in early Islamic times, used to define populations in the Maghreb. Although

⁴⁷ For a detailed ethnographic and socio-linguistic account of the *Ida ou Zeddout* see K: E. Hoffman’s book *We Share Walls: Language, Land, and Gender in Berber Morocco* (2007). Her study offers valuable insights into tribal identity, social organization, gender, language and cultural practices of this tribe in the Sous region.

it still carries some relevance among Marrakech's tanners, their ethnic identity today requires a more nuanced perspective (McDougall 2010, 15–37). Nonetheless, these two categories remain important in anthropological/ethnographic research within historical contexts. Among the oldest generation of tanners, this dual distinction is still strongly present and has become part of their self-awareness and -identification. In conversations, they often distinguished between “Arabs” and “Berbers”, something not heard among younger tanners. It is important to note that the entire community of tanners at *dār dbāgh* uses the term “Amazigh” rather than “Berber”. On two occasions during fieldwork, when I accidentally used the term “Berber”, the tanners – understandably – reacted with anger. Older *Ishelhin* among the tanners show a renewed self-confidence in their Amazigh identity. This reflects the recognition of Amazigh culture and identity in the national narrative, as well as its increasing visibility in public life and media since the 1990s and early 2000s. The persistence of the dual distinction among older tanners stems from their socialization during the era of strong Arabization and the elevation of an Arab-Islamic identity under Hassan II. During this period, their identity as Imazighen was marginalized, while “Arabs” held a dominant position in Moroccan society, national narratives, and likely within craft communities as well. Among the “in-between” generation, ethnic identity is already more diffuse. Some identify as both Amazigh and Arab, often because their parents were in interethnic marriages and they grew up in mixed households. They also came of age during a period when national identity was increasingly defined and accepted as both “Arab” and “Berber” in Moroccan society. As a result, these tanners primarily identify as Moroccan, though some with Amazigh backgrounds still acknowledge tribal affiliations. Among the youngest generation, this dualism no longer plays a role. In conversations, they never differentiated between “Berbers” and “Arabs”, neither for self-designation nor for others. Instead, identifying as a “tanner” and as Moroccan takes precedence. Most young tanners work with all three types of leather, regardless of whether the *m’ellem* they work for identifies as “Arab” or “Berber”. In sum, this demonstrates how the rigid separation between “Arab” and “Berber” ethnic identities, as once drawn by Jemma and other scholars, is becoming increasingly obsolete, while other aspects have become more relevant in defining the ethnic identity of today's tanners. The community at *dār dbāgh* is bound together by multiple shared elements that shape both collective and individual identity. While many cattle tanners still affiliate with the *Ishelhin* tribe *Ida ou Zeddout* and maintain cultural, social, and

linguistic ties to *tashelhit*-speaking regions where their hometowns are located, the overall community is now far more diverse. Yet the linguistic legacy of the *Ishelhin*⁴⁸ remains deeply embedded in the craft: *tashelhit* continues to shape the technical vocabulary of leather production, with many specialized terms for tools, work stages, and gestures derived from this dialect. Even tanners who do not identify as *Ishelhin* rely on this terminology in daily practice, reinforcing a shared professional language across ethnic backgrounds, while Moroccan Arabic (*darja*) remains the language of everyday communication. Alongside this linguistic dimension, religion unifies the community: all are Muslims who share the same faith, regularly attend the mosque together, and practice fasting during *Ramaḍān* – often spending the days together in the tannery. A shared collective history of the craft also strengthens cohesion, as most tanners – especially among the older generation – had relatives who worked in leather before them. In addition, the tanners share responsibility for the tannery as a communal space, along with a sense of belonging, pride in craftsmanship, and solidarity regardless of whether they are “Arab” or “Berber,” young or old, *m’ellem* or *m’tellem*. In this way, the strict dualisms of the past have become softer, and combine with other dimensions – language, religion, shared memory, collective ownership, belonging, pride, and solidarity as craftsmen – that now define the (ethnic) identity of Marrakech’s tanners.

The transmission of (tacit) knowledge and skills in leather crafting now follows both traditional and institutionalized pathways. For clarity, I define “tacit knowledge” with examples from leather craft for a better understanding. Scholars have described tacit knowledge as “[...] the understanding and skills that individuals possess but find difficult to articulate or convey to others. This type of knowledge encompasses experiences that range from recognizing faces to mastering complex physical tasks, like riding a bicycle. Unlike explicit knowledge, which can be easily shared through instructions or facts, tacit knowledge is often acquired through personal experience and interaction, making it inherently complex and nuanced.” (Sheposh 2025). Demonstration therefore is more relevant than explanation in passing on tacit knowledge. For example, a skilled leather craftsman can touch raw skins and immediately sense whether they will yield supple or brittle leather. This judgment relies on touch, smell, and visual cues (grain tightness, scars, stretch) that are nearly impossible to codify in

⁴⁸ This fact was also confirmed by my colleague Sara Fatihi (Department of Near Eastern Studies, University of Vienna) who is herself a *tashelhit* speaker. A list of the craft related vocabulary is added to Appendix B.

words. Similarly, in handling tanning solutions, a tanner knows by smell, taste, or feel whether the solution has the proper concentration. Apprentices learn this not from manuals or other descriptions, but by repeatedly handling skins under the guidance of experienced tanners. Thus, in leather craft, apprenticeships and master-apprentice relationships are the main vehicles for transmitting tacit knowledge. The most significant mode of learning is still intergenerational transmission, where a *m'ellem* and experienced *m'tellem* pass their expertise to apprentices. This process also conveys social values and norms. Today, apprenticeships typically begin around age sixteen and last two to three years, depending on the apprentice's ability. Most apprentices have completed lower secondary school – named *college* in Morocco – before starting their apprenticeship. Older and “in-between” generations experienced a more traditional transmission: fathers brought their sons to the tannery at a very young age. Many spent time there after school, observing and absorbing the craft almost playfully and unconsciously, becoming familiar with techniques and vocabulary. The Moroccan scholar N. Samlak (2019, 304–7) defines this first of four apprenticeship phases as the “pre-discovery” phase, which involves early exposure without deliberate instruction. The second, the “introductory phase”, is marked by observation, listening, and linking linguistic expressions with tools, stages, or gestures. The third “practical phase”, begins when apprentices train practical skills by assisting a *m'ellem* or experienced *m'tellem*, performing simple tasks like rinsing skins. In the fourth and final “participation phase”, apprentices carry out complex operations and may already share knowledge with newcomers. They also learn negotiation skills with buyers of finished leather or sellers of raw skins. Moreover, the *m'ellem* takes care that his apprentices are also introduced to their networks. Today, all younger tanners at *dār dbāgh* are already in this fourth phase. Traditional knowledge transmission was also common during Jemma's research in the 1960s, though she provided little detail. Sons of tanners began learning between ages 12 and 17 – slightly earlier than today – starting with simple tasks and gradually moving to complex ones (Jemma 1971, 79–80). Among younger generations, however, a shift has occurred: some reported joining the craft after leaving school, with no prior familiarization with the craft or family background in tanning.

Alongside the four phases of traditional apprenticeship – crucial for acquiring tacit knowledge and practical skills – young tanners now also attend government-sponsored tanning courses that provide theoretical training in all three types of leath-

er. This program, offered at the *Centre de Qualification Professionnelle des Arts Traditionnels–Ancienne Médina*⁴⁹ in Marrakech, is organized by the *Université Sidi Mohamed Ben Abdellah* and the *École Supérieure de Technologie* in Fèz, with support from the *Ministère du Tourisme, de l'Artisanat et de l'Economie Sociale et Solidaire* (see al-Wakili et al. 2023a). The course is also open to any *m'ellem* seeking official certification to be formally recognized as *m'ellem dyāl jeld*. The program combines traditional and “new” learning methods, ensuring both theoretical and practical training for newcomers. This represents a shift toward hybrid forms of knowledge transmission supported by government institutions. Such hybrid forms also allow the introduction of new techniques and knowledge that may influence technological choices in leather crafting. Moreover, they increase the likelihood that more young Moroccans will enter the craft, helping to ensure its continuation – at a time when fewer apprentices are taking it up, as will be discussed in the next section.



Fig.8: Two co-workers inside a workshop, both specialized in working with the *sedriya* (Photo: V. Immervoll, Marrakech, July 2024)

⁴⁹ For more information on the institution and their educational program see <https://cqpat.odoo.com/metiers-de-cuir> (accessed 2025-07-06).

Current Economic Situation and the Influences of Tourism

Since Morocco's independence in 1956, the country's economy has undergone major transformations. Under Hassan II, the market economy gradually opened, and since the reign of Mohammed V it has become increasingly liberalized. This process paved the way for a global surplus economy strongly influencing Morocco's national markets. The tanners of Marrakech must cope with the pressures of this surplus economy – challenges they share with craftspeople worldwide, both in the Global “South” and “North.” Industrialization and the introduction of new technologies have led to the rapid deskilling of “traditional” craftspeople. At the same time, international trade agreements allow cheap mass-produced imports to flood local markets (Marchand 2022, 9–10). These global economic pressures deeply affect Marrakech's tanners and their craft. Today, the economic situation of the tanners is difficult and pressured. The labor-intensive and time-consuming production of handcrafted leather must compete with cheap, often Asian-imported, synthetic leather products. Such sales dominate the leather shops along the main street of the *Bāb Dbbāgh* quarter, whose construction has been promoted by the city in recent years. These shops are mainly tourist consumption-oriented and not toward the needs of the local population. Tanners explained that many workshops once producing leather goods have disappeared, replaced by tourist-oriented shops selling finished products – often imported – at inflated prices from which tanners receive no benefit. They stressed that, compared to other tanneries, *dār dbāgh kbīra* holds a clear advantage: tourists can be guided through the tannery and then visit the integrated leather shop to purchase items such as handbags, belts, or the well-known Moroccan *babouche* slippers. This model, also found in Fèz⁵⁰, is absent from most small-scale tanneries, which lack the space or resources to set up such shops – a disadvantage acknowledged by the tanners. The sale of imported leather goods is not limited to the tannery quarter. Finished leather products are offered throughout Marrakech's *sūqs* in endless forms, colors, and varieties. A walk through the winding alleys quickly reveals the same repetitive stock, often made of synthetic leather. Yet nearly every vendor insists the items are made of Moroccan leather – a striking example of the commodification of cultural heritage (see Comaroff and Comaroff 2009). The difficult economic situation weighs especially heavily on the younger generation of tanners. One young man in

⁵⁰ The tannery in Fèz was visited by the researcher – at that time as a tourist – during an earlier stay in Morocco in March 2023, prior to conducting research in the tanneries of Marrakech.

his early twenties of a tanners family, told me he had learned the craft early by spending much of his childhood with his father in the tannery. Yet, he explained, the situation is so hopeless that most young tanners must take on a second or even third job to support their families. Each morning he goes from tannery to tannery looking for work. If unsuccessful, he buys a bundle of mint and positions himself on the main street to guide tourists around the quarter and through the tanneries: this is a rather new phenomenon among Marrakech's tanners. He admitted this is often more lucrative than tanning, where he sometimes earns even less – if he is given work by a *m'ellem* at all. Guiding tourists, however, is risky; without a tourist guide license it is illegal. If caught, young tanners face up to two months in prison or to avoid prison they must let slip some money into the police's pockets. The tense economic reality is also evident within *dār dbāgh*. A *m'ellem* typically earns in average around 10,000 DH per month from selling finished leather, though this income fluctuates sharply with current market conditions. Those specializing in goat or sheep leather are in a somewhat more stable situation than those crafting cattle leather, as both leather types are more demanded on the market. During one visit to the cattle leather market, a *m'ellem* from *dār dbāgh* described his despair: he had been unable to sell any leather for two weeks – a situation shared by many others. From this income, a *m'ellem* must pay his *m'tellem*, purchase materials and pay for other resources such as water, and still provide for his family. To sustain their income, many *m'ellem* obviously have reduced both the number of apprentices and the duration of apprenticeships. This limited training prevented apprentices from acquiring a full skill set, affecting the quality of finished leather (Marchand 2022, 72). Since the 1960s such a shift must have occurred in Marrakech's leather craft, though it cannot be definitively verified, since Jemma's ethnography contains no details on apprenticeship length or the economic situation of tanners. Regarding the fact that back then around 40 tanneries were active, it seems as if the economic situation was better. What could be observed today is that the younger generation of tanners is gradually vanishing. When I first visited *dār dbāgh* in September 2023, three apprentices from the youngest generation were working there. By my last visit in December 2024, all three had left the tannery to work in the tourism sector as hotel security staff. This pattern is visible in other tanneries as well. The decline directly undermines the transmission of knowledge: when asked if they would pass on the craft to their sons, the youngest tanners consistently replied no, convinced that the leather craft has no future. The

state has tried, with mixed success, to counter this decline through several measures. Some of Marrakech's tanneries are state-owned to provide jobs, while government-supported tanning courses facilitate entry into the craft by offering theoretical knowledge. These efforts aim to preserve tanning as part of Morocco's cultural heritage. More broadly, they also attempt to address Morocco's extremely high youth unemployment rate – 36,7 % percent in 2024 for Moroccans between the age of 15 and 24 years (HCP 2024a, 1). Considering the difficult economic situation combined with the physically exhausting work, reliance on tacit skills, and its social stigma as “dirty” leather craft seems far from an attractive career for young Moroccans. Moreover, access is restricted to men only, as the craft is regarded as “male” by the government, society, and the craftspeople themselves.

dār dbāgh as Social Space and Workplace

A typical working day at *dār dbāgh* begins early in the morning, usually right after the Islamic morning prayer *fajr*. This schedule allows most tasks to be completed by noon or early afternoon, before the heat peaks. The tanners work every day even though usually Fridays are off for Moroccans. On Fridays the tanner come to just make the necessary tasks and leave again before the afternoon prayer followed by a couscous meal together with the family. The *m'ellem* starts the day by inspecting his vats to plan the work, then discusses tasks with his *m'tellem* over a glass of *atāy*, giving instructions for the day. Some *m'ellemen* prefer to work with certain co-workers, either because of their skills and/or kinship ties, and many of these relationships have lasted for years or even decades. Experienced co-workers are often preferred over younger, less experienced tanners. If younger tanners have no tasks, they still spend the day in the tannery, often sitting in workshops smoking *kīf* or *hashish*. Occasionally, friends with no connection to the leather craft also stop by – for tea or a brief chat. Collective smoking of *kīf* or *hashish* as *rite de passage* and social practice among tanners was also noted by Jemma. The *kīf* was even used as wage for apprentices, which is not practiced anymore today (Jemma 1971, 83–85). Both substances derive from the cannabis plant but are consumed differently: *hashish* is mixed with tobacco and smoked as a joint, while *kīf* is smoked in a traditional Moroccan *kīf*-pipe. Today, their use is largely viewed critically, especially by older tanners. Only a few of the older tanners still smoke *hashish* occasionally to ease joint or back pain from dec-

ades of physical labor. Younger tanners, in contrast, often told and showed me their skin damage from caustic chemicals and poor or non-existent protective work garments. Work clothes such as hip waders are very expensive and almost impossible to find in Morocco, and even the government does not really care about providing tanners with protective work clothing – also something that causes frustration among the tanners.

All still-active small-scale tanneries in Marrakech were restored and modernized starting in the 2010s. As a result, old structures and the tanneries as social spaces were significantly transformed. New facilities were added, including showers and toilets, and in *dār dbāgh* a liming mill was installed in one workshop. *dār dbāgh kbīra*, where Jemma conducted most of her research, still exists but has also been heavily reshaped by modernization attempts. In some tanneries, however, remnants of the so-called *masrīyā* can still be found. These small, sometimes multi-storied buildings were once also part of the tanneries in Fèz (Le Tourneau and Paye 1935, 168). Tanners explained that the first floor served as single-room housing for craftsmen moving between their hometowns and Marrakech, while the ground floor was used as a workshop for postprocessing tanned skins. Walls of the *masrīyā* often contained storage niches – small “safes” (*taghma*) for personal belongings and goods such as honey, salt or other foodstuffs exchanged among tanners. In the past, it was common for each tanner to bring goods from his home region, which were exchanged among them the community. The existence of the *masrīyā* inside the tanneries thus reinforced the importance of the tanneries as social spaces. Today, due to the renovation of the tanneries, these important spaces have almost entirely disappeared and the exchange of goods is not practiced anymore. Nonetheless, some tanners still use the tannery as living space.

Dār dbāgh itself has shared ownership with eight *m’ellemen*, each holding one workshop. Based on sketches made during fieldwork, a plan of the tannery was created (see Fig. 11), showing all active workshops (H1–H8) and two abandoned ones (AH1–AH2), inaccessible due to advanced decay. H4 belongs to a *m’ellem* who does not work anymore as tanner and H5 was never seen from the inside as it is a private space serving as living quarter of a tanner – a boundary that was of course not crossed by the researcher. *dār dbāgh* also has a dog for security purposes whose doghouse is located between H5 and one of the wells. Workshops - called as well *ḥānūt* - are generally oriented inward toward the craft site with no direct access to the

street, as visible on the *dār dbāgh* map (Geertz 2022 [1979], 59). Inside, *ḥwanet* are adopted to craft needs: storage areas for materials, work clothes, and dried skins ready for postprocessing; one or two wooden beams (*ikhtār*) for using the *sedriya*-tool; and shelves for personal items, food, and a teapot of cold-brewed *atāy* for the *m'ellem* and his *m'tellem*. *ḥwanet* are usually dusty from postprocessing but remain cool due to the absence of windows – making them preferred spaces for breaks. During *raḥa* (break), tanners eat small snacks, drink tea, share jokes, discuss football (*darīja*: *kūra/tashelhit*: *takurt*), and smoke cigarettes before returning to work, often still in their work clothes rinsed briefly with water before sitting down.

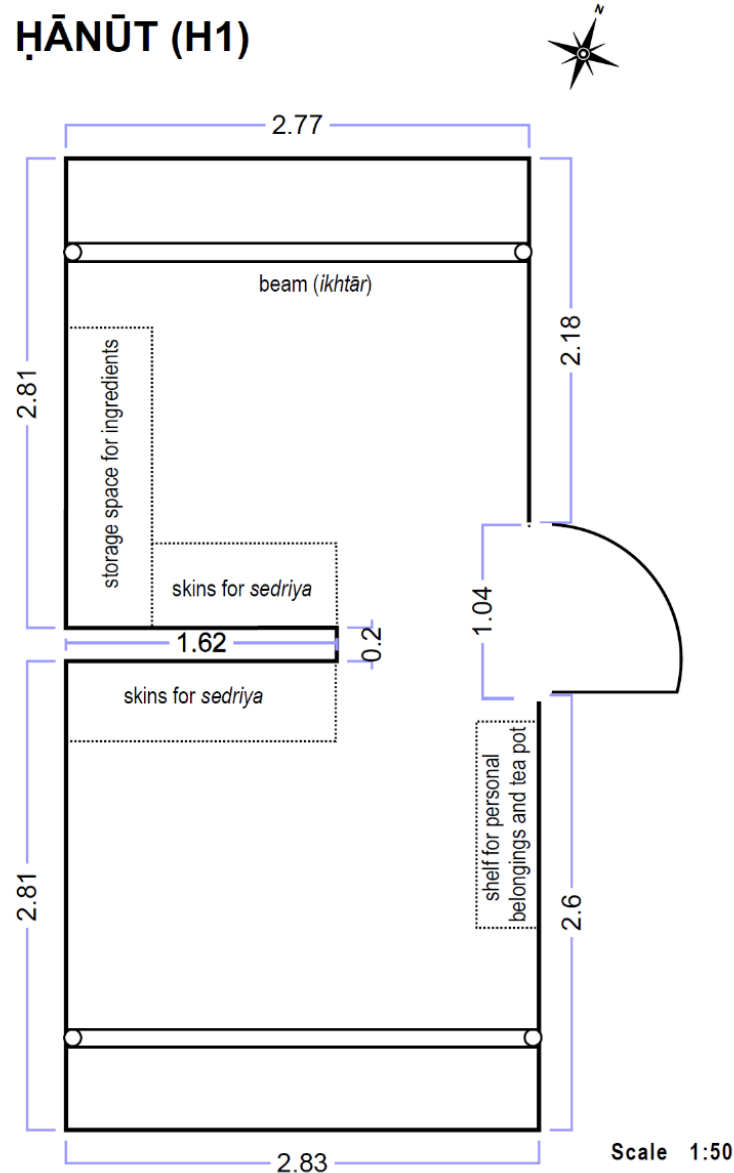


Fig. 9: Graph with measurements of a workshop (*ḥanūt*) of *dār dbāgh* (created by V. Immervoll, 2023/24)

From the tanners' perspective, the tannery infrastructure is divided into collective and individual facilities. High-above basins (*merkel*, M1–M3) for washing skins are used collectively, while tanning vats are privately owned. Water sources are also collectively managed: *dār dbāgh* has two groundwater wells and, since modernization, a connection to the municipal water system. Of the two wells, only one remains active, recently drilled deeper to reach the sinking groundwater table. Six water taps are distributed across the tannery – five supply water for leather crafting through hoses, while the tap between H2 and H3 is reserved for drinking water. A ceramic cup placed there is used by all tanners, including myself during the fieldwork. On the first day of *Ramaḍān*, tanners symbolically break this cup to mark the start of fasting. The tannery also has access to municipal electricity, intended for powering the liming drum, though it has not yet been used – a point discussed further below. Both the liming drum, installed during modernization, and the surface sewage network (illustrated with dashed brown lines on the map) are collectively owned. The sewage channels connect to the municipal system but frequently clog with animal hair and other residues. Covered only by grooved metal plates, they can be lifted easily so tanners can clear blockages; responsibility falls on whoever caused the obstruction. Each tannery contains two types of vats, both used for producing all three kinds of leather. The rectangular vats are called *meyjar* (approx. 1.77 m long, 1.28 m wide, 1.32 m deep), while the round vats are called *qṣṛīa* (approx. 1.9 m in diameter and depth). Both are shown in Fig. 10 on the next page. The *meyjar* can hold larger and longer, unfolded flat elements such as cattle skins, but it is less suitable for thorough mixing of a vat's solution and skins. In addition, its internal temperature can differ from the outside temperature for a longer period. For a *qṣṛīa*, these three characteristics are exactly the opposite. Unfortunately, neither the tanners nor further research could explain why these two different vat types exist in leather craft. What is certain is that they have remained unchanged since Jemma's research and were already notified during protectorate times (Jemma 1971, 34, 37; e.g. Brunot 1923, 84–85).

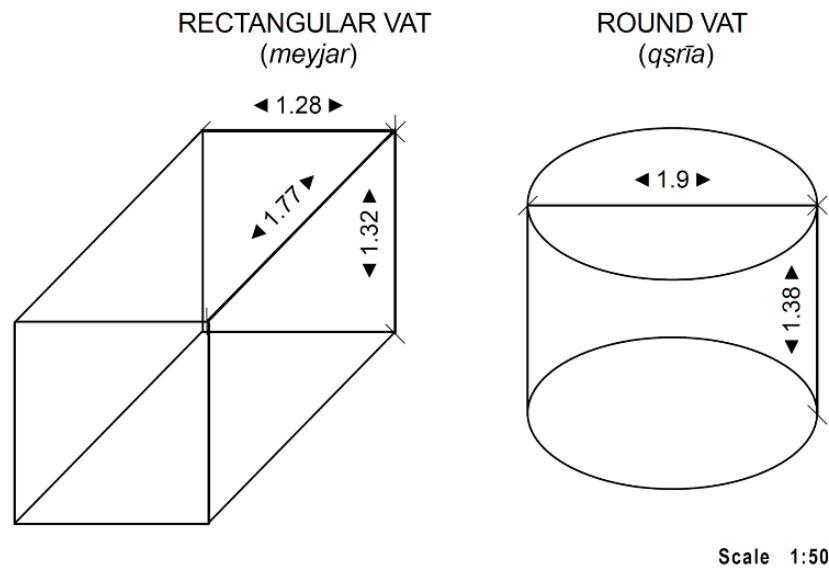


Fig. 10: Graph with measurements of rectangular and round vat used for crafting leather (created by V. Immervoll, 2023/24)

The arrangement of vats in the tannery follows a strict rule: materials from different processing stages must never be mixed, as this would ruin the skins. For this reason, rectangular and round vats are kept in separate areas. *dār dbāgh* has 53 rectangular vats, most of them in active use, and 22 round vats, of which 19 are regularly used for tanning. On the map of *dār dbāgh*, rectangular vats are marked in red and round vats in green. Additional vats, marked in yellow, are collective property rather than individually owned. These are available to skilled co-workers who wish to produce leather for their own sale alongside their work for a *m’ellem*. During fieldwork, only one co-worker used these vats, processing cattle skins independently thanks to his physical strength. Storage areas for raw skins near the entrance, as well as spaces for finished leather, are collectively shared and also marked on the map. A small, designated area exists for drying tanned skins, but it is far too little space for the amount of produced leather pieces. Thus, immediately after tanning, wet skins are taken outside the medina to a drying place known as *ḥarrash*. A workday ends in the early afternoon, leaving some tanners time to take on second jobs, while others spend their leisure time in the tannery. After finishing their tasks, the tanners wash their clothes and leave them to dry in the sun before showering. Those living inside the tannery often prepare communal meals, cooking slowly on a gas burner with a pottery attachment. Someone always stays behind to watch the meal – a responsibility often assigned to me – while others went together to the neighborhood mosque for ‘*asr*,

the afternoon prayer. Afterwards, some *m'ellemen* check on the drying leather outside the medina. In the late afternoon, gatherings often take place in one of the *hānūt*, bringing together active *m'ellemen*, retired masters, and younger tanners. These gatherings also serve as spaces for discussing and deciding on matters important to the tannery. Before turning to the *chaîne opératoire* of leather crafting, I will briefly address the existence of a second tannery quarter in Marrakech's medina.

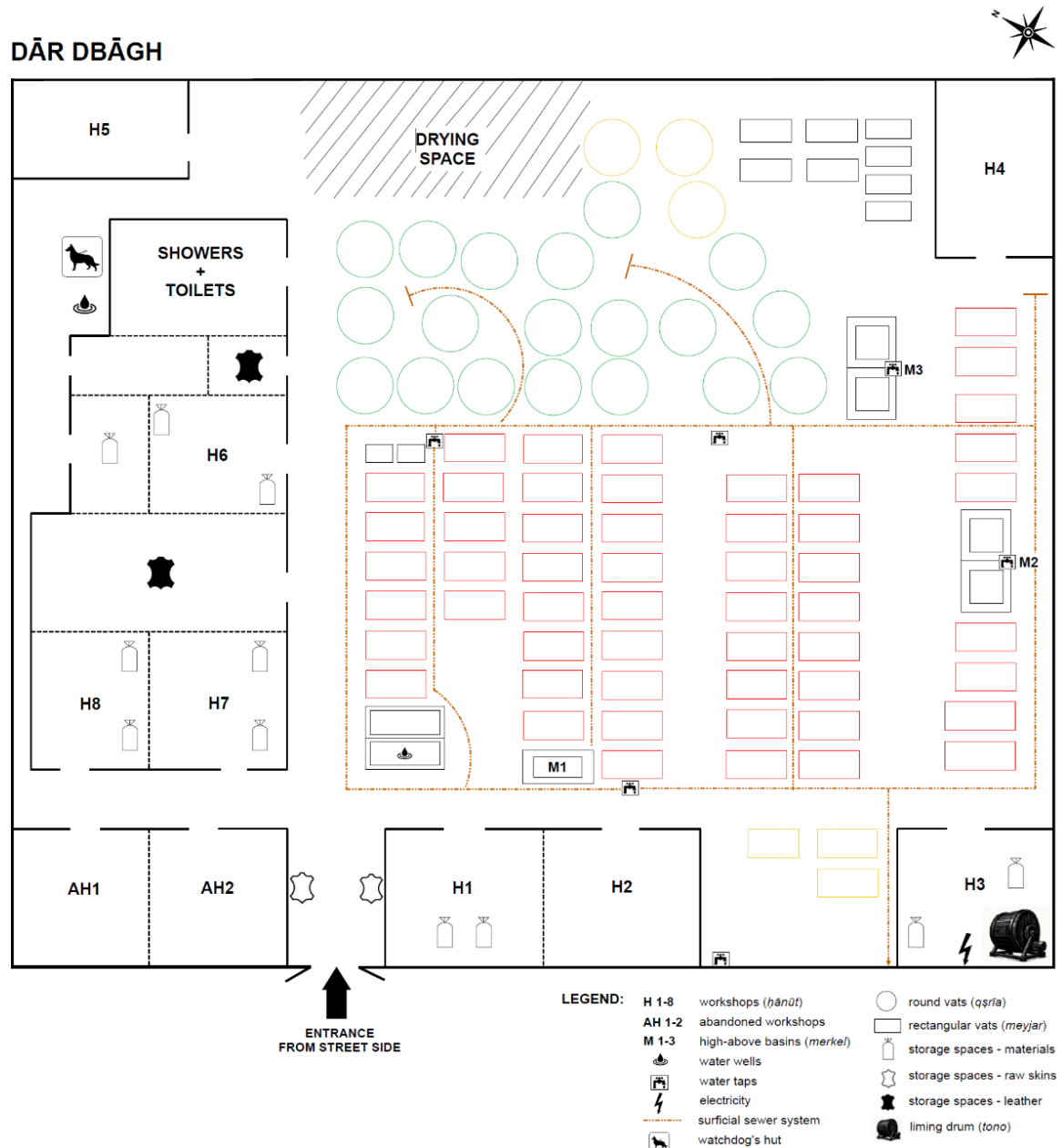


Fig. 11: Map of dār dbāgh (created by V. Immervoll, 2023/24)

Excursus: Marrakech's Second Tannery Quarter

In her ethnography, Jemma notes the existence of a second tannery quarter – *Riaḍ Laarous* – situated in the northern medina. It existed as well closely and well connected to market where finished leather was sold and the Ben Youssef Mosque. She reports that five tanneries operated there, though leather processing played a far less significant role compared to the eastern quarter of the city. *Riaḍ Laarous* also held symbolic importance: it was linked to marriage rites and housed a holy site where women made offerings to seek help with fertility or breastfeeding (Jemma 1971, 17–19). Today, only a few traces of these tanneries remain, as most have been replaced by residential buildings due to major urban transformations in recent decades. The location itself is striking, as it contradicts the “common rules” for situating urban tanneries. Typically, because of the emissions, raw material supply, and access to water, tanneries were established on the outskirts of cities. That these “common rules” have been applied in relation to the location of tanneries in the eastern quarter of Marrakech is obvious (Fili and Rhondali 2002, 658–59). It is likely that *Riaḍ Laarous* was once located at the city's edge, an area characterized by crafts and commerce (Wilbaux 2001, 51). In 2022/23, T. Reitmaier and his archaeological team visited one abandoned tannery in *Riaḍ Laarous* several times. These visits allowed a rough documentation of surviving structures that correspond to already known structures in the still existing tanneries: brick-lined vats in round and rectangular forms, a large stone for beating leather, a dye mortar, workstations for postprocessing, storage spaces, and other workshops (see Fig. 12). To date, no in-depth archaeological investigation of this quarter has been conducted. Its precise age, development, and significance therefore remain uncertain. What can be said is that the quarter itself emerged around the 16th/17th century during the Saadian period. Yet the questions of when and why the tanneries were established here remain unresolved, since no historical written or other sources have yet been found to clarify the history of this former tannery quarter within Marrakech's medina (Reitmaier et al. 2024, 385–89; Wilbaux 2001, 29, 44–108, 254–75).



Fig. 12: Structures of a round vat probably used for the tanning stage in an abandoned tannery located in Riad Laarous (Photo: T. Reitmaier, Marrakech, 2022/23)

Crafting Leather

During this author's fieldwork in 2024, one of the tanners drew a thoughtful analogy between the process of working with animal skins and raising a young child. Just as with a child, whose development requires careful observation, patience, and trust in their own rhythm, a skin must also be guided through its transformation at the right pace – neither rushed nor forced but treaded with patience. With a child, you walk alongside them, letting them explore independently while always keeping a watchful eye, ready to step in if needed. Similarly, a skin is well watched and only moved to the next stage when it shows the right signs – when it is ready – not simply because the tanner wants to. A tanner feels, sees and even smells if his skins are ready to be carried on to the next stage until it becomes leather in the end. Crafting leather follows an ordered and complex procedure, precisely established over centuries as will become obvious through subsequent descriptions. In conversation with one of the tanners at *dār dbāgh* he told us about his experiments with skins. When he skipped the bating and gave a skin directly from a liming bath to the vat filled with wheat bran, the skin was severely damaged. Similarly whenever he moved them after liming to the vat with pigeon droppings without proper washing that led to poor results. The leather became unusable. Skipping essential steps and operations – such as washing between stages or mixing up materials – consistently resulted in ruined skins. The tanner's experiments show that even small deviations from the process can compromise the entire leather crafting process. The tanner who told us about his experiments, reinforced a core principle shared by many tanners: each step in the process builds upon the last, and careful, deliberate transitions are essential in crafting leather. The following pages present the *chaîne opératoire* (CO) showing a standardized procedure commonly known as vegetable tannage (al-Hassan and Hill 1992, 197–98). As illustrated in the graph below (see Fig. 13), the CO begins with preparations (No. 1), including information on the origins of raw skins, curing techniques, and the raw skin market of Marrakech, *sūq jeld*. The second stage describes the washing (No. 2) and soaking of raw skins, followed by the third stage, known as liming (No. 3), which also includes the dehairing (No. 3.1.), a further liming (No. 3.2.) and fleshing (No. 3.3.) practices. The fourth stage is bating (No. 4), which is followed by the salt bath (No. 5). The sixth stage is bran drenching (No. 6), after which the tanning process (No. 7) itself takes place. Finally, postprocessing (No. 8) and the distribution of the end product leather (No. 9) are discussed.

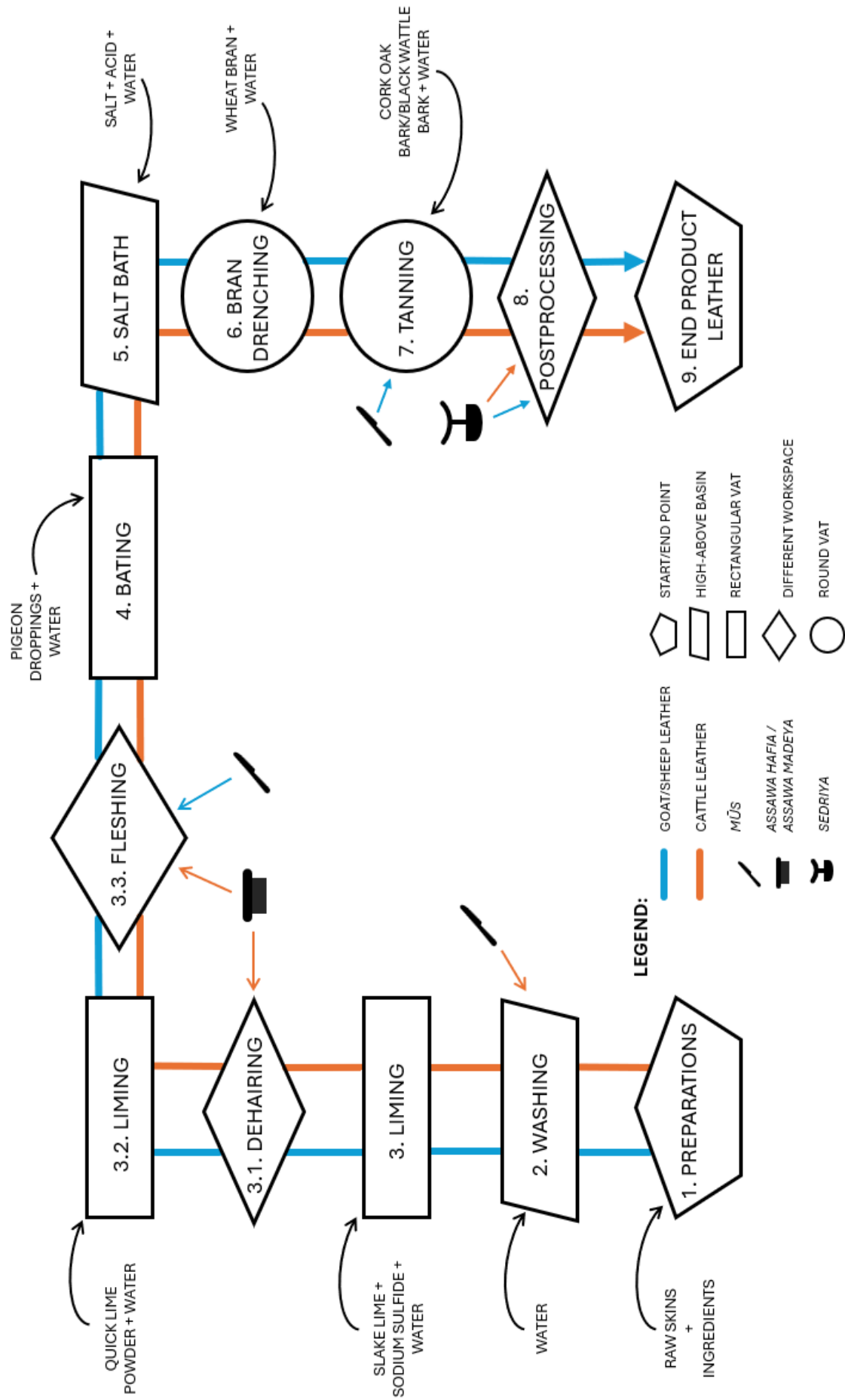


Fig. 13: CO-graph of crafting leather (created by V. Immervoll, 2025; after M. Volken and V. Immervoll, see Reitmaier et al. 2024, 403, Fig. 14)

Each stage is then framed by a certain shape to symbolize the workspace(s) in which each stage is carried out. All three types of leather follow the same sequence and are marked by the two colored lines – blue for goat/sheep leather and orange for cattle leather. Moreover, the materials for each stage are mentioned as well as the different needed tools, depending on the type of leather. The comparative analysis within the stages follows a structured approach: it begins with a description of current practices for goat and sheep leather, which is then compared to the ethnographic descriptions in Jemma's ethnography. The same structure is applied to cattle leather, whereby a direct comparison is not always possible as Jemma's focus was primarily on crafting goat and sheep leather. To better understand the leather craft practices as described in the following pages, certain terms in relation to animal skin and its preparation require a short clarification. The animal skin is composed of three primary layers, each with distinct structural and functional properties relevant to the tanning process (see Fig. 14). The epidermis, the outermost layer, contains hair follicles, sebaceous glands, and surface contaminants. It is also known under the term "grain side", used in the present MA thesis to relate to this skin layer. The grain side is targeted during the soaking and liming steps to remove hair, surface fats, and external contaminants. Then the tanner's attention shifts to the hypodermis, the innermost fatty and connective tissue layer. It is referred to as "flesh side" (*lahmia*) in the following pages. The flesh side gets mechanically removed during fleshing to prevent decay and ensure that tanning agents can penetrate evenly. What remains is the corium or dermis⁵¹, the central fibrous layer rich in collagen, which is the actual substance transformed into leather. It absorbs the tanning agents – whether plant-based or chemical – and is preserved, stabilized, and enhanced through tanning, drying, and finishing (Salaman 1986, 293–94).

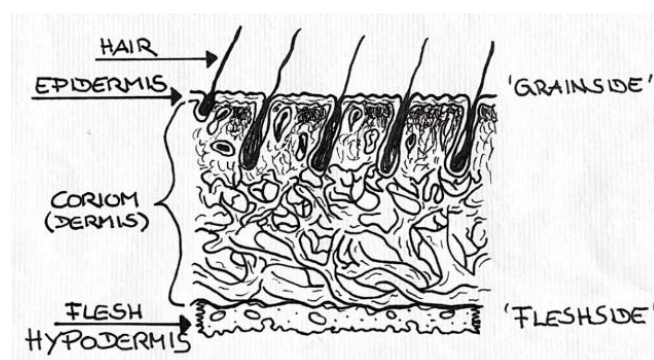


Fig. 14: Illustration of skin layers (hand drawn by V. Immervoll, 2025; after Salaman 1986, 293)

⁵¹ In German, this part of the skin is called "Lederhaut", which literally can be translated to "leather skin", as it is precisely the layer that undergoes tanning.

Preparations

In general, preparations (CO-No. 1) are one of the most crucial steps in any craft process. It is not only essential to have the appropriate tools ready, prepare the workspace, and organize co-workers, if necessary, but also to ensure that all required materials are available in sufficient quantity and, ideally, of good quality before beginning the manufacturing process. Thus, preparation constitutes the starting point of the presented CO. This subchapter does not address individual tools and other equipment (e.g., sieves, tools), work garments, or details concerning work organization. These categories are instead linked to the specific stages of the process, allowing for a clearer understanding of their function and relevance within the manufacturing workflow. The origin and curing methods of raw skins, as well as the *sūq jeld* where they are sold, are addressed separately in the following paragraphs. The skin market was visited multiple times during field research. Alongside participant observation, individual sellers and tanners at *dār dbāgh* were asked regarding the selling of raw skins at the *sūq* and the materials required for leather crafting. Market activities were documented through photographs and short video recordings for further analysis and documentation purposes. The second part of this subchapter presents insights into the materials – or ingredients as the tanners name them – used in leather craft. Additionally, the presentation will be drawing on (pre-)protectorate literature and historical photographs, primarily from European archives. As Jemma's ethnography offers little information regarding the origin, historical context, acquisition, and preparation of individual materials, it was necessary to collect additional data on these fields. The objective is to gain deeper insight into the continuities and changes in the materials used in Moroccan leather craft since pre-protectorate times, and to understand how these are embedded within broader cultural, social, and economic contexts. At the end of this subchapter an excursus on mills in the context of Moroccan leather craft is provided. This synthesis combines archaeological data from the mill excavation conducted by my colleagues with anthropological (or ethnographic) insights gathered through conversations with the mill owner and other tanners, as well as from historical ethnographic sources.

Origins of Raw Skins and Curing Techniques

Raw skins are the most essential material in leather production and are traded at the permanent raw skin market, *sūq jeld*, located on the northeastern edge of the medina. Tanners refer to it as *sūq elkhānz*, literally the “stinky smell market”. Saturdays are particularly busy, as fresh raw skins from across Morocco arrive, making it the most important buying day for tanners. Many sellers travel long distances, delivering skins early in the morning via trucks or pickup vehicles. In addition to sellers offering raw skins originating from Marrakech, some come from southern regions such as Taroudant, Tiznit, Agadir, and Chtouka Aït Baha, while others arrive from areas north or east of Marrakech, such as Khouribga, Beni Mellal, and Settat. The raw skin sellers act as intermediaries, collecting skins from individual butchers, slaughterhouses, or directly from livestock breeders and then reselling them at markets throughout the country. According to Jemma’s research in the 1960s, some of the raw skins originated directly from animal breeders in the Haouz plain or the Atlas Mountains (Jemma 1971, 29). At that time, most animals were raised either by (semi-)mobile pastoralists from tribal groups in the mountains or by farmers in the plains. As part of French colonization efforts in Morocco, agriculture was promoted as a symbol of advancement and modernity, “[...] thereby spawning a duality between the ‘gentle’ farmers of the valleys and the indomitable Berber warriors of the mountains” (Vidal-González and Mahdi 2019, 138). To extend their control over tribal areas and pastures, the French supported sedentary farmers in the plains and used the military strategy of isolating mountain herders. This situation led to conflicts between tribal confederations, the sedentarization of nomadic groups, the colonization and transformation of communal grazing lands into agricultural property, and the exploitation of these lands for new export-oriented crops. Despite a significant shift from (semi-)nomadism to transhumance – both forms of pastoralism – these practices remain important components of the agropastoral landscape of the High and Middle Atlas Mountains today⁵². On the northern and southern slopes of the High Atlas, transhumance is practiced on high-altitude mountain pastures known as *agda*⁵³. (Semi-

⁵² I strongly recommend to interested readers the publication of A. Skounti *Le sang et le sol* (2012) which provides an in-depth study of historical developments as well as transformations of Moroccan nomadism within the last decades.

⁵³ In 2016/17 T. Reitmaier and his team carried out an interesting ethnoarchaeological study among one of the ‘last’ nomadic families of the tribal confederation Aït Atta in the High Atlas Mountains, see Reitmaier et al. 2017.

)Nomadism continues in pre-Saharan and Saharan territories, particularly along the Algerian border and in the southeast near towns such as Errachidia and Ouarzazate. Since the end of the Protectorate, pastoral activities and livestock farming in Morocco have faced similar challenges. In recent decades, the national economy has liberalized and become increasingly influenced by globalization, resulting in the industrialization of animal husbandry and the privatization of grazing lands. Climate change has made droughts more frequent and accelerated desertification, thereby reducing the fertility of pasturelands. Political conflicts also affect pastoralism, notably in Western Sahara and along the partially mined Algerian border⁵⁴, making it increasingly difficult – and sometimes life-threatening – to access grazing areas in certain regions of Morocco. Over the past three decades, government regulations under 'modernization projects' (e.g. *Plan Maroc Vert* of 2008) have attempted to preserve pastoral mobility through cooperatives based on ethnicity and lineage. These efforts have largely failed due to a significant shift in the management of communal lands. Formerly managed by cooperatives, these lands have since been privatized by (inter)national investors and leased for large-scale agriculture. As a result, many pastoralists have given up their way of life, sold their herds, and settled permanently, often in urban areas where they have greater access to employment opportunities (e.g. in the tourism sector), education, and healthcare (Brisebarre and Mahdi 2021, 385–97; Vidal-González and Mahdi 2019, 141–46). More detailed research and conversations with intermediaries at the *sūq jeld* revealed that many animals from which raw skins are sourced no longer originate in Morocco. Most trucks arriving at the market, relatively identifiable by their license plates, come from Casablanca, Morocco's primary industrial center and home to a major cargo port. Generally, the country's imports and exports are handled chiefly through the ports of Jorf Lasfar, Tanger Med, and Port de Casablanca. The Moroccan population's growth – from approx. 11.6 million inhabitants in the 1960s to around 36.8 million in 2024 – has significantly increased the demand for meat (HCP 2024b). This demand can no longer be met by the country's own pastoral or breeding efforts, leading to a substantial rise in live animal imports of sheep, goats, and cattle. According to newspaper reports, live animals are imported from Brazil, the European Union – specifically from the former colonial powers Spain and France. More recently, Morocco has imported sheep from Australia (see Lechheb 2023; Unknown 2023; Eljehtimi 2025). Raw skins are primarily a by-product or even

⁵⁴ Historically, there existed a free transnational mobility of pastoralists between Morocco and Algeria which ended with the closure of borders in 1994 (Brisebarre and Mahdi 2021, 389).

a leftover of meat production. Typically, the raw skins sold at the *sūq jeld* come from animals slaughtered according to Islamic rules, applicable to both traditional and mechanical slaughtering methods (Arshad 2023, 123–38). In Casablanca and Marrakech, industrial slaughterhouses⁵⁵ remove raw skins from the animal either using mechanical skinning machines or by hand with a knife – the same technique employed by individual butchers. Mechanical skinning offers the advantage that the flesh side remains completely free of cuts. Conversely, tanners reported that individuals who skin by knife (*jellad*) are often unskilled and may cut deeply into the flesh side, resulting in poor-quality raw material for leather production. Historically, experienced butchers performed skinning with care to avoid damaging the flesh side, as it was further processed by tanners. Another source of raw skins is the annual Islamic festival of *īd al-Aḍḥā*, the “Festival of Sacrifice”, or *īd al-Kbīr* (“big holiday”), as commonly referred to in Morocco and elsewhere. This is probably the most important Islamic holiday, commemorating the willingness of the Prophet Ibrahim (Abraham for Christians and Avraham for Jews) to sacrifice his son. It takes place in the twelfth Islamic month, *dhū al-hijjah*, after the period for performing the *Ḥajj*. For Muslims, it is a time marked by family gatherings, traditional meals, and a strong emphasis on charity, community, and spiritual reflection. Naturally, it is also celebrated by tanners and their families. Festivities begin with communal prayers, followed by the ritual sacrifice of a sheep or other livestock – such as goats, cattle, or camels – acquired by families who can afford them (Melton 2010b, 951–52). Today, animals are slaughtered in accordance with Islamic rules by a family member. Jemma informs us that in the past, the “*Eid*” slaughter was carried out by an experienced butcher who went from household to household on that day, beginning with the wealthiest families and ending with the poorest. She also noted that this practice is increasingly carried out by the families themselves, which remains common today. Previously, meat and skins had to be processed within three days due to a lack of refrigeration, whereas today’s households are able to preserve meat for longer periods. In the past, raw skins were then further processed by tanners, who obtained them either from butchers or from women selling them at a small square next to the old *sūq jeld*. Jemma also notes that no specific rituals connected to this important Islamic festivity were performed among

⁵⁵ More in-depth information about slaughterhouses in Marrakech could not be found, but for an industrial slaughterhouse located in Casablanca. It provides jobs for more than 300 people and has a stall capacity of more than 900 cattle and 5000 sheep. See <https://www.casaprestations.ma/en/abattoirs-slaughterhouse/> (accessed 2025-05-20).

the tanners (Jemma 1971, 108–10). Returning to the present, climate change in Morocco has also impacted the *ʿīd al-Aḍḥā* festivities, highlighting the serious effects of drought on the country’s animal husbandry. In early 2025, King Mohammed VI issued an official announcement requesting the population to “[...] abstain from performing the rite of slaughtering sheep on *ʿīd al-Aḍḥā* this year due to a drop in the country’s herd following years of drought” (Eljechtimi 2025). When animals are slaughtered, typically all parts of the sacrificed animal – including the skins – are processed. Raw skins are either salted and turned into skins to be used as prayer rugs by the families themselves, or an intermediary comes door-to-door to collect them. The intermediary then sells the *Eid* skins at the *sūq jeld* to the tanners. It is worth noting how raw skins were handled in rural areas⁵⁶ in the past. According to a Moroccan friend whose family lives in the region near Tinghir, raw skins from the sacrifice were brought by villagers to mosques, where they were either sold or traded to a skin collector. The resulting money and/or goods were used entirely for the benefit of the mosque’s community. In addition to individuals who collected skins from door to door in urban areas, it was also common for families to deliver raw skins directly to the tanneries. This practice reflects a broader cultural awareness in Moroccan society of the value of leather craft. However, in June 2024, the Moroccan newspaper *Hespress* published an article indicating that this cultural awareness is declining. The article strongly criticized the fact that millions of raw skins from *ʿīd al-Aḍḥā* were discarded as waste instead of being used in leather production, resulting in considerable economic losses. The article proposes a noteworthy solution to this issue: the establishment of temporary mobile slaughterhouses during *ʿīd al-Aḍḥā* to facilitate veterinary inspections and manage the further processing of animal parts, including the collection of raw skins. For example, such mobile slaughterhouses already exist in major cities in Turkey⁵⁷ (see Shabl 2024). Let us now address what happens to raw skins after their removal from the animal’s body. They are transported unrefrigerated, simply covered with tarpaulin on the beds of trucks or other vehicles to the market. The raw skins are not dried but delivered already preserved, either with a mixture of rock salt and animal feces or by simple salting on the flesh side. The temporary preservation of raw skins using salt,

⁵⁶ Insights into rural leather production are given by the study of the Spanish archaeologist J. J. Ibáñez and his colleagues who conducted ethnographic research in an area South of the among tourists popular Moroccan city Chefchaouen, see Ibáñez et al. 2002.

⁵⁷ This rather new phenomenon of mobile slaughterhouses for *ʿīd al-Aḍḥā* is for instance practiced in the Turkish metropolitan city Istanbul. Besides slaughtering facilities, it includes a medical station, cafeteria, rest area, prayer room and Wi-Fi. See <https://www.dailysabah.com/turkiye/istanbul-prepares-modern-sacrificial-area-for-eid-al-adha/news> (accessed 2025-06-29).

drying, or other materials to prevent putrefaction is known as “curing” (Salaman 1986, 293). Although the tanners are not responsible for curing skins, they learn about different methods in the government’s tanning course (see al-Wakili et al. 2023a). Goat skins are sold in tube shape, not cut open along the ventral side, whereas sheep and cattle skins are already opened. During the week, tanners can purchase older leftover skins from Saturdays in dried form and at a lower price. According to Jemma’s ethnography, there were additional sources of raw skins associated with different curing methods and materials. As discussed in more detail above, the first source consisted of pastoralists/nomads and livestock farmers from the Haouz plain or the valleys of the Atlas Mountains. These skins were sprinkled by animal breeders with rock salt on the flesh side to preserve them during transportation to the *sūq jeld* in Marrakech. Curing with salt remains the predominant method today. Other sources included the city’s butcheries, which sold unprepared skins – known as *khḍr* in *darīja* or *cuirs verts* in French – either at the market or directly to the tanners. A final historical source of raw skins was an intermediary known as *l-bat*, who typically purchased unprepared sheep and cattle skins, as well as goat skins in bundles of six pieces (*tarha*) at the *sūq jeld*, then cured them on site using various preservation materials. Once cured, the skins were sold directly to the tanners. The profession and role of the *l-bat* have since disappeared. In the past, goat skins were cured by the *l-bat* using a mixture of various local materials: salt, goat feces, slaked lime residues from the liming process (obtained by the *l-bat* from tanners), herbs that grew in cemeteries, and ash from burned argan kernels originating from the Sous valley. The *l-bat* would first remove the goat’s glandular sacs before mixing the above materials with water to cure the raw skins. Afterwards, the *l-bat* applied the mixture by hand through the animal’s anal opening on the flesh side, without cutting open the ventral side. Sheep raw skins, already opened along the ventral side, were sold in three different states: cured with sheep feces on the flesh side and dried; with feces and added salt, then dried; or entirely unprepared. Cattle and camel skins were simply salted by the *l-bat* on the flesh side and sold either in dried or undried form (Jemma 1971, 29, 33). Salting, sometimes in combination with animal feces, and drying remain the primary curing materials for goat, sheep and cattle skins to this day. Curing is done either on site at the slaughterhouses or the smaller butcheries, by the animal breeders or raw skin sellers. Goat skins are still sold in tube form, and sheep as well as cattle skins

opened along the ventral side. The selling of camel or horse skin could not be observed during this author's visits at the *sūq jeld*.



Fig. 15: Stacked cattle raw skins next to the entrance of *dār dbāgh* (Photo: V. Immervoll, Marrakech, February 2024)

A Visit to *sūq elkhānz* in Marrakech

After discussing the origin and curing techniques of various types of raw skins, I now invite the reader to accompany me on an imaginary visit to the aforementioned *sūq jeld*, located in the northeastern part of the medina. Generally, all three types of raw skins are sold at the market, namely goat (*me'za*), sheep (*ḥewli*) and cattle (*bgari*). More specifically, the most common among them are kid and doe, lambs and ewe as well as cow and calf raw skins. In Jemma's time, this market was located in what is now the popular tourist area of *sūq semmarine*, characterized by luxury shops and restaurants near *rahba qdīma* square and close to the central Ben Youssef Mosque. Historically, the square served as a grain market but had already declined in importance before Jemma conducted her research⁵⁸. On the historical city map *Plan de la ville de Maroc (La Rouge)* by P. Lambert (1868b) the former *sūq jeld* is presented by the number 2, referring to *Souk el Geld (Marché des peaux)*:

⁵⁸ O. Lenz mentions the wheat market *rahba* and its central location in the city of Marrakech which was still active during his stay in 1879 (Lenz 1884, 257).

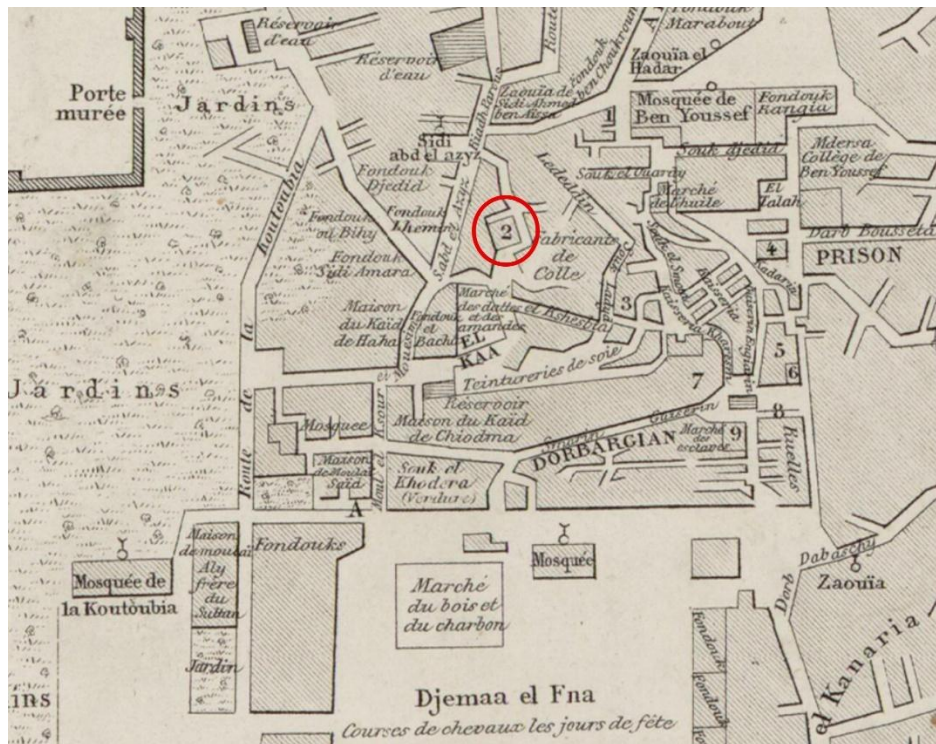


Fig. 16: Part of P. Lambert's map showing the former location of the raw skin market (Source: P. Lambert "Plan de la ville de Maroc (La Rouge)", 1868; edited by V. Immervoll)

It is likely that the raw skin market was relocated to the outskirts due to its pungent smell and for logistical reasons, such as easier access to the street network outside the medina for deliveries by truck or car. To date, no historical evidence could be identified that would more precisely indicate the date of a permanent raw skin market's establishment in Marrakech. The historical and contemporary functions of the former *sūq jeld* are commemorated by an information board placed on the square in front of the market entrance. Today, finished cattle leather is sold and temporarily stored in the old market building, allowing the space to retain its primary function as market. Among tanners, it is now referred to as *sūq bgra* (cow leather market). In the past, alongside cattle, sheep, and goat skins, camel skins were also commonly sold. The production of camel leather has completely disappeared today from Marrakech's tanneries, though some older tanners still retain knowledge of the process, as will be explored later in this thesis. The former *sūq jeld* stood at the upper end of a north-south axis that still serves as the commercial artery of the medina, along which many *sūqs* are located. Although the activities within the *sūqs* probably may have shifted over time, one of the largest buyer groups for leather – the cobblers – still operate workshops in the adjacent *sūq le-gherraz*, just as they did in the 1960s (Wilbaux

2001, 111–17, 219–20; Gómez-Rivas 2015, 53; Jemma 1971, 29–31). The cobbler workshops continue to operate, and most have since expanded to include display and retail spaces for leather goods such as shoes (e.g. *babouche*), belts, wallets, and handbags. Some of the leather goods sold are produced by the cobblers themselves, while others are imported, primarily from China and Turkey.

At the new *sūq jeld*, raw cattle, sheep, and goat skins are sold almost daily, with the exception of Fridays. To reach the *sūq jeld* on foot, one must pass through *Bāb Dbbāgh* and walk along a busy multi-lane road that runs beside the dusty, bone-dry riverbed of the *oued Issil* (see Fig. 17, a). Occasionally, a donkey or mule cart loaded with raw skins passes by, heading toward the tannery quarter (see Fig. 17, b). These deliverers work independently. The *m'ellemen dyāl jeld*, who are typically responsible for sourcing all materials used in leather craft, pay these workers to collect purchased raw skins at the market, transport them to the tanneries, and unload them.



Fig. 17: a) Riverbed of the oued Issil; b) delivery man with goat raw skins on his mule cart heading towards the tannery quarter (Photos: V. Immervoll, Marrakech, March 2024)

Raw skins are stored inside the tannery in dark and cool locations (see Fig. 15), sometimes covered with tarpaulin or old blankets to hide them from sunlight, heat and rain. The donkeys and mules are kept and cared for in vacant plots at the edge of the tannery quarter within the medina. The use of relatively small two-wheeled carts is necessary to navigate through the narrow alleys of the eastern medina quarter. For many individuals, delivering raw skins or other materials serves as a vital

source of income, requiring neither specific skills nor costly and specific equipment. A raw skin seller once remarked in an informal conversation that “a whole nation’s life depends on skins”, highlighting that a wide range of people – from pastoralists, farmers, and butchers to tanners, smiths, cobblers, and leather shop owners – depend on the leather industry. The raw skin market also offers space and opportunities for income to those not directly engaged in the leather industry. For example, a person near the entrance provides water, soap, and paper towels for visitors to wash their hands after touching raw skins during the auctions. As is well known, Moroccans cannot live without *atāy*. Accordingly, a person circulates with a large tea pot to sell it, and for those who get hungry, a date vendor sits beside the market administration office. Some visitors to the market do not participate in the auctions at all – they simply come to observe the market activities, rest on low stools, and enjoy their tea (see Fig. 18).

The entrance to the *sūq jeld* is marked by a several-meter-high arch gate, added as part of a relatively recent extension of the medina wall. Like many spaces associated with the Moroccan leather craft, this market remains almost entirely male-dominated. Women, as well as tourists, are seldom – if ever – seen here. During all my visits, I observed only one elderly woman rummaging through the day’s leftovers, likely searching for a piece of sheepskin for her personal use. On another occasion, I encountered a middle-aged woman selling fresh tomatoes to market visitors. When raw skins are delivered early in the morning, skin sellers must pass the market administration office – located to the right of the entrance – to pay tax for each skin they bring. To provide an overview of the *sūq jeld*, a map is shown in Fig. 19 on page 83. Sellers pay 2 DH for each camel, cattle, or horse skin, and 1.50 DH for each goat or sheep skin. After payment, the seller is permitted to place his skins in the quadrangular courtyard, which is surrounded by a connected complex of single-story buildings with lockable rooms. These rooms may have originally been intended for the *l-bat*, but are now primarily used as storage spaces for older skins or personal belongings (e.g., teapots, low stools) that make time at the market more comfortable. A few individuals use the rooms for sleeping, despite a blackboard hanging next to the market administration office explicitly prohibiting this. Some of these people collect residual salt grains scattered on the courtyard floor using shovels and wheelbarrows to earn a few dirhams. These salt grains are reused for curing cattle skins. At the center of the

courtyard is a roofed market structure, open on all sides, primarily used for storing older, dried and salted goat and cattle raw skins.



Fig. 18: Visitors observing ongoing market activities under the roofed market structure (Photo: V. Immervoll, Marrakech, February 2024)

After paying the fees, the sellers – sometimes accompanied by their sons – place the skins in a specific arrangement throughout the courtyard, which determines the sequence of the auctions, as will be discussed later. Sheep skins are messily stacked in the western section at the far end of the *sūq jeld* next to container for raw skin leftovers, while goat and cattle skins are sold near the entrance, in the eastern front part of the market. Every skin seller we spoke to emphasized that the economic situation of the entire leather industry is currently in decline. This is evident in the large quantities of leftover raw skins discarded in a container dumpster, which is emptied each week by the municipal waste service. During my visits, I observed that the container was almost always full, especially on weekdays. However, goat skins are also messily stacked, though they are mostly stored under the roofed market structure. In most of Marrakech's tanneries, goat raw skins have been the most commonly processed type in leather manufacturing today. Therefore, it is logical to store this important raw material under the roofed space to shield it from sunlight and heat, thereby preserving the quality of the skins. Skins stacked in open-air areas are sometimes covered with tarpaulin to prevent putrefaction. Cattle skins are folded into compact bundles for transportation, then unfolded and again loosely folded once when stacked in the

courtyard. This allows buyers to sort through them piece by piece to assess their quality.

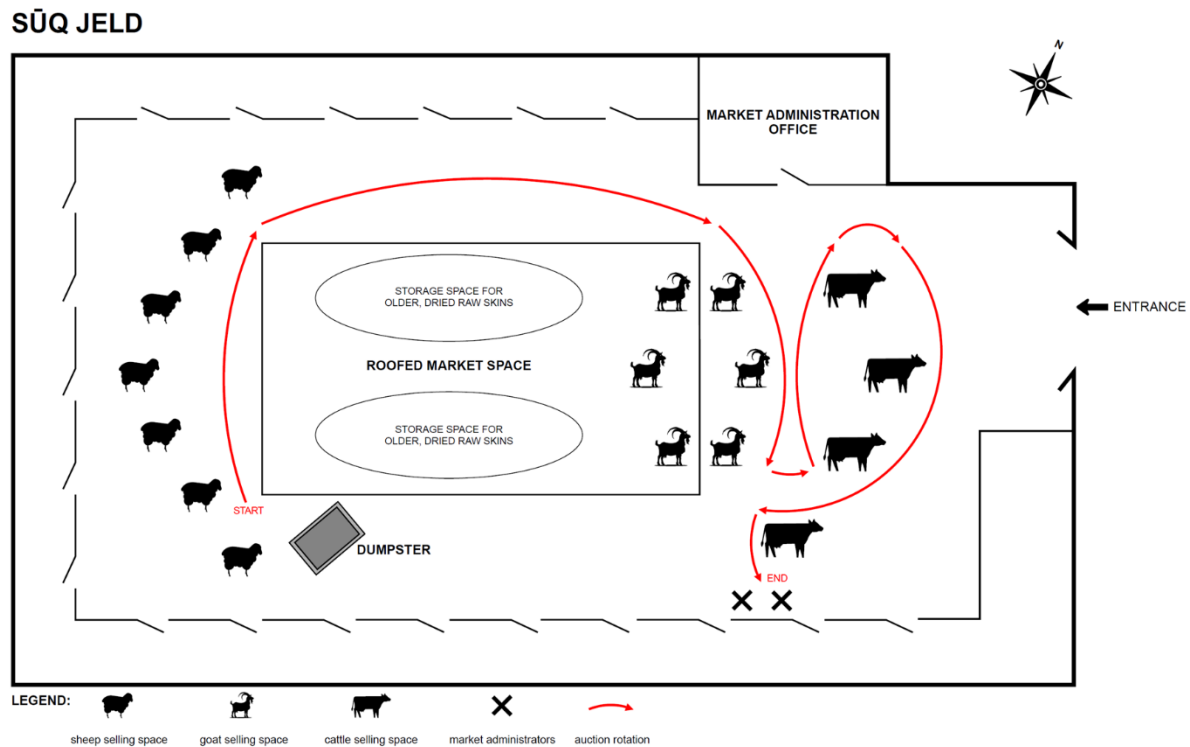


Fig. 19: Map of *sūq jeld* (created by V. Immervoll, August 2025)

As mentioned earlier, tanners usually visit the *sūq jeld* on Saturdays, sometimes accompanied by their apprentices to familiarize them with quality-checking techniques, auction procedures, and the local network of sellers and tanners, since most of Marrakech's tanners gather there on that day. Occasionally, *m'ellem* from the tannery in Rabat⁵⁹ come to the *sūq jeld* in Marrakech, as they told us, because higher-quality skins from Southern Moroccan regions are available there. In the past cooperatives bought better quality skins and small, "traditional" tanneries got only the ones with lower quality (Jemma 1971, 33). Today cooperatives do not play an important role anymore in purchasing raw skins. Each *m'ellem* is responsible for acquiring this raw material, sometimes for his lineage-based community but not for the whole tannery. Some tanners have preferred sellers – often linked through tribal affiliations – from whom they regularly purchase raw skins. Before the auction begins, a *m'ellem* goes from seller to seller, feeling each skin by hand to state the quality. Three factors are

⁵⁹ A. S. Ettahiri and his team carried out an archaeological investigation on the abandoned old tanneries in Rabat, see see Ettahiri et al. 2024.

crucial in determining the quality of all three types of raw skins: the environment in which the animal lived, its age, and its diet. One tanner told me that he carries these three factors in both his mind and hands when going to the market, highlighting that tactile inspection is essential to assessing quality. The flesh side of a raw skin reveals whether the skinning was done by hand or machine. Some tanners prefer hand skinned raw skins even though they have defects on the flesh side instead of machine skinned ones. Hand skinned skins originate often from a healthier, probably Moroccan environment compared to imported animals. Traces of illness and parasites are not necessarily visible on raw skins' flesh side but become apparent on the grain side after dehairing – this also applies to scratches. This is why it is important to ask the seller about the origin of the skins. For instance, when goat skins come from the Essaouira region – a good example of environmental influence – there is a high probability they are covered with scratches on the grain side. This region is known for its argan trees, which goats typically climb to feed on the leaves. Another notable comment from a tanner was that the high presence of plastic in the environment also affects skin quality. Regarding age, one general principle applies: the younger the animal, the better – or healthier – the skin. Diet is the third essential factor, as it greatly affects an animal's health and, for example, influences the thickness and suppleness of the skin. Jemma wrote that to state the quality of the skin the suppleness, strength and appearance are important, but she did not mention gestures or strategies how these three characteristics were checked by the tanners (Jemma 1971, 33). Today certain regions in Morocco are known for producing high-quality raw skins. The highest quality skins typically come from the Sahara regions, where the healthiest and largest animals are found. "Large" means, from a tanner's perspective, the widest and longest skins. As discussed earlier, the (pre-)Saharan regions are severely affected by climate change – particularly drought and desertification – as well as political conflicts, all of which impact animal husbandry and in the end the prices on the *sūq jeld*. Another important source of high-quality raw skins is the area near Beni Mellal in the High Atlas, where skins are particularly long and wide. Both regions are harsh environments for humans and animals, where local livelihoods depend heavily on animal breeding beside agriculture. The tanners explained that the more people depend on animals for their livelihood, the better they tend to care for them – which in turn improves the quality of skins. The German raw skin trader W. Freudenberg (1879–1957) provides an overview in *The Hide and Skin Markets of the World*,

published in English posthumously in 1959, which includes information on the trade and origins of Moroccan raw skins during the protectorate period. In a footnote, he noted: “The conditions in all these countries [Tunisia, Algeria, Spanish and French Morocco] are very unsettled at the moment and many farms with their livestock have been destroyed, especially in Algeria.” (Freudenberg 1959, 69). He also stated that the best quality goat skins came from Tangier and Spanish Morocco, while in French Morocco, they originated in mountainous areas near Marrakech, Beni Mellal, and Fèz. Regarding sheep raw skins, he mentioned only mountainous regions in general. Unfortunately, no details are provided on the origin of high-quality cattle skins. Another key point he made is that skins are best in summer, as animals tend to be thinner and have longer hair in winter. This highlights the influence of seasonal changes on animal condition, especially when the hair is further processed after its removal from the grain side. Moreover, Spanish Morocco had fewer raw animal skins available, resulting in significantly higher prices compared to French Morocco. As a result, raw skins of all types were traded from French to Spanish territories – sometimes even becoming contraband commodity (Freudenberg 1959, 13–14, 72–74). Generally, salted and dried raw skins – primarily goat and sheep, and secondarily cattle and camel – were major Moroccan export goods to countries such as Germany, the United Kingdom, and France during the protectorate period (Pascon 1977, 412). Even in the pre-protectorate period the export of raw skins and furs from Morocco was common (Lenz 1884, 418). Let us now return to the contemporary raw skin trade at the *sūq jeld*. Tanners seeking sheep raw skins head to the market early – just after the *fajr* morning prayer as the sun rises over Marrakech’s medina. Market auctions begin with sheep skins – making it essential for tanners specializing in sheep leather to arrive early – followed by goat and then cattle skin auctions. Jemma also noted that auctions began with sheep skins during her research (Jemma 1971, 33). The contemporary auction rotation is illustrated with red arrows and the market administrators’ positions with two black crosses in Fig. 19. Tanners who need cattle or goat raw skins arrive later in the morning, but all auctions typically end around noon. The current economic downturn is also evident in the large number of raw skins left unsold at the end of the auctions, probably getting thrown away if they are not sold during upcoming days. Every successful transaction is finalized with the market administrators, who oversee the auctions and document the completed deals. Raw skins of cows, goats, and sheep are traded mostly through an auctioneer or market mediator known

as a *dellāl* (pl. *dellāla*), who arranges negotiations between sellers and buyers. Typically, sellers commission *dellāla*, though buyers can also do so. The auctioneer pre-selects the skins, called *atrah*, based on quality and sets a minimum price. Tanners told me they never fully trust a *dellāl*'s quality assessment and therefore inspect the skins themselves before the auction begins. The *dellāla* are highly motivated to sell, as they earn a percentage from the person who commissioned them. Auctions begin with the announcement of the floor price and the presentation of one skin as a sample to the tanners gathered around the seller's raw skin piles. Bidding then begins, until the highest offer is reached. One cattle skin is usually sold in a range of 50–70 DH. Goat skins are sold in bundles (*tarha*) of six, ranging from 60–90 DH. A single sheep raw skin typically costs 20–30 DH. Notably, sellers from southern Morocco (e.g., Western Sahara) sometimes use the West African CFA franc – a currency used in Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, and Togo. This currency belongs to a broader monetary zone, alongside the Central African CFA franc. Introduced by France in 1945, CFA originally stood for *Colonies françaises d'Afrique*, later renamed *Communauté Financière Africaine* following the independence of France's former African colonies in the 1960s (see Pigeaud and Sylla 2021). The currency at the market is an interesting materialized symbol of (post-)colonial connections between West, Central and North African countries. Returning to the *sūq jeld*, auction proceedings can sometimes become heated, requiring the *dellāl* to step in and mediate between buyer and seller to finalize the deal. The importance on markets of *dellāla*, who already were part of the auctions during Jemma's research (and probably even before the colonial period), has decreased since then, as no deals are made anymore by paying raw skin sellers with other goods like wheat, living animals, sugar etc.⁶⁰ Historically, the main role of a *dellāl* was to bridge the knowledge gap between buyers and sellers in trading goods, acting as intermediaries in commercial negotiations and to additionally state the quality of products (Geertz 2022 [1979], 67–68). It seems like the trust of tanners into *dellāla* does not exist anymore. Once a deal is struck at the *sūq jeld*, it must be officially sealed by the market administrators. These administrators are identifiable by their white, floor-length garments and their fixed position at the market (see black crosses in Fig. 19). Each transaction is recorded on an official document and signed by the seller, buyer,

⁶⁰ This may be interpreted as an indicator that the fully operative *dellāl* institution was closely related to an overall socio-economic historical situation in which commercial face-to-face interactions still were embedded within stronger non-commercial and non-market institutions than today.

and *dellāl*. If a tanner lacks sufficient funds on the market day, a debenture can be signed as a promise of payment. Either the tanner pays at the following Saturday market, or the administrators collect the payment from the tannery and give it to the seller. This mechanism serves as a guarantee for the seller and *dellāl* to receive their payments in the end.



Fig. 20: Ongoing auction of goat raw skins (Photo: V. Immervoll, Marrakech, March 2024)

Further Ingredients used in Leather Craft

“Ingredients” (*maqādir*) is the general overall term given by the tanners to describe other materials used in leather craft beside raw skins. The tanners at *dār dbāgh* are convinced that their skins are always alive, for them it is important to treat the skins with good and natural ingredients. Jemma’s ethnography does not give much information about which ingredients were in use, their origins or how they got prepared, except for some vegetable tanning agents such as cork oak bark and the vanished tamarisk gall named *takkut* (Jemma 1971, 40). Nevertheless, the spare information relating to ingredients in leather craft given by the ethnologist will be added within this subchapter. In combination with information out of (pre-)protectorate literature about Moroccan leather craft, it is possible to reveal continuities and changes in relation to

ingredients. Former dyers, like pomegranate peel, are discussed in the post-processing section of the CO as, at least for the tanneries in Marrakech, they are not part of the production process anymore. The following section focuses on the origins, historical context, purchase and delivery practices as well as preparation of each ingredient. Generally, the main ingredients needed in today's leather craft are water, salt, sodium sulfide, lime powder, pigeon droppings, wheat bran, and shredded cork oak or acacia bark. Some of these materials have (inter-)regional origins and others are imported from other countries and continents such as Brazil, South Africa, China and Turkey or from the European Union. This shows a strong influence on leather craft by what today is a globalized (world) economy, and what historically may have been a somewhat weaker impact of long-distance trade. At this point I want to introduce the concept of "*bldi*" and "*romy*", which was extremely helpful for communication purposes during the field research and will help to understand certain differentiations within this master thesis. In Moroccan Arabic "*bldi*" (literally: from the *bilād*, i.e. from this country) refers to something or someone local or native, while "*romy*" (fem.: *romya/tashelhit: aromi*) or "*frans*" (fem.: *fransia/tashelhit: afransi*) in some regions (literally: "Roman" or "Frankish") refers to someone or something foreign, often European or Western. These terms are used to differentiate between local and non-local aspects of Moroccan culture, including people, objects, food and crafts. But let us come back to the materials which are often purchased through cooperatives to reduce costs, whereby the individual *m'ellem* is the one who decides how much is needed of which material. The *m'ellem* has an overview of the whole stock and how much leather he will produce in the upcoming weeks to set the quantity. Even though the structures of cooperations changed slightly, the purchase of materials by a cooperative was also practiced in the last decades and therefore can be seen as an element of continuity. The quality of some ingredients as for example of wheat bran or oak bark is stated either by the chairman of a cooperative, who is himself a master of skin and has the full trust of the other *m'ellemen*, or by the individual *m'ellem*. Prices for materials are generally oriented after quality and amount. During the field research it became clear that most of the cooperatives or *m'ellemen* still use their tribal connections to other regions in Morocco to purchase certain materials. It can be hypothesized that in the past tribal networks, especially among *Ishelhin*, were even more essential, widespread and had a stronger influence on the purchase of "*bldi*" or native ingredients, generally used in crafts. It would therefore be an interesting research topic to recon-

struct these (inter-)regional tribal networks for understanding better their importance for crafts in Morocco. This can only be done to a minimalist extent in the course of this master thesis.



Fig. 21: Delivery of cork oak bark in a 50-kilogram bag directly to the tanning vats (Photo: V. Immervoll, Marrakech, February 2024)

Let us start with thematizing the material ingredient water (*darīja*: *l-ma/tashelhit: amaan*), which is along cork oak bark one of the most expensive materials used in leather production. Water is an extremely crucial and essential resource needed for most of the steps in the CO, but its access and supply are also highly vulnerable as we shall see. The chosen location of the tannery district in Marrakech next to the *oued Issil* derives not from the significant smell rather than from the craft's high demand for water (Fili and Rhondali 2002, 658–59). Before the time of Jemma's research, washing of skins after the liming procedure was practiced in the river bet of the *oued Issil* by the *m'tellem* who carried the skins on long wooden beams to the outside of the city wall before dehairing and fleshing (Jemma 1971, 36). Due to the ongoing drought, there is a severe water scarcity throughout Morocco for several years now, the river *oued Issil* along the *Bāb Dbbāgh* no longer carries any water and is not used by the tanners anymore (see Fig.17, page 80). Jemma did not consider in her ethnography the source(s) for water in general or in which way Marrakech's ancient water supply system of *khettara* had an influence on the city's leather production. It could have been the case that *khettara* had no significance anymore back then. Today the demand for water in the tanneries is either met through a connection

to the municipal water system or by having access to groundwater wells. At *dār dbāgh* water is partly provided through groundwater wells, and partly through the municipal water supply system. The situation is even worse in other tanneries where the water supply is entirely connected to the municipal water system. In these tanneries most *m'ellemen* have access to an individual water supply with a water meter protected by a lock (see Fig. 22). In 2023 a master paid for one cattle skin approx. 2,5 DH for water, which makes 125 DH for 50 skins. For six pieces of either goat or sheep skin a *m'ellem* has to pay 2,5 DH each *tarha*. Water payments are covered by the individual *m'ellem* or by sharing the costs by all the *m'ellemen* of a tannery, as it is the case at *dār dbāgh*. Moreover, tourism with its extremely high demand for water increases the general shortage. In turn, this has an impact on prices as well (Kliot 2019, 169–75). The general scarcity of water and the fact that many tanners can no longer afford it due to its high price have a strong influence on the production of leather. Water is needed in every step of the vegetable tanning process and as well for different techniques like chrome tanning or mill liming.



Fig. 22: Two water meters protected by a lock inside of a tannery (Photo: V. Immervoll, Marrakech, February 2024)

Another indispensable ingredient used in the leather craft was already thematized in relation to curing techniques of raw skins above, namely salt (*darīja*: *melḥa/tashelhit: tisnt*). It is needed in leather production for the bran drenching step and the salt bath afterwards. It has held significant importance in Moroccan culture for centuries, functioning not only as a culinary ingredient but also as a means of preserving certain

food materials as well as a food addition and attractant in animal husbandry. Hence salt has been a highly valued exchange good in historical North African trade networks, and at times even as a currency. The long-standing tradition of salt extraction is closely embedded in Morocco's history, with various regions developing distinct methods and practices (see Reitmaier et al. 2023)⁶¹. In the year 1879 salt in Marrakech was sold at the wheat market *rahba* as testified by O. Lenz (1884, 257). Today table salt is sold by small vendors or grocery stores in amounts for everyday use. The salt used at *dār dbāgh* comes from the Ourika valley, about 30 to 40 kilometers South of Marrakech. The majority of the population in this region are *Ishelḥin*, also one of the *m'ellemin* at *dār dbāgh* and his two brothers grew up in a small village nearby and use their tribal network to purchase the salt for the whole tannery which gets shredded, delivered in 40 to 50 kg plastic bags. To clarify, the deliveries are either made by the eldest son of one of the brothers, who regularly moves back and forth between his home village⁶² and Marrakech, or are brought by other relatives and friends who regularly come to Marrakech. For other tanneries another source to acquire salt are the specialized *ḥwanet* in the neighborhood. Relating to the salt from the Ourika valley, it is surprising that there are no (ethnographic) studies available about the techniques and knowledge of its extraction, even though this material holds such an important cultural significance in Morocco. The following information is based on a picture found in the Wikipedia entry of the Ourika river⁶³ during further research into the topic. As shown in the picture and local interpreters, salt extraction in the Ourika valley is carried out using salt ponds⁶⁴ fed by (apparently) natural saline springs. The salt harvesters construct shallow basins – lined with clay or stone – into which the salty spring water is directed. As the sun evaporates the water over days or weeks, salt crystals gradually accumulate and are harvested manually. It is obvious that this low-tech, sustainable method requires deep knowledge of the materiality of salt, local climate patterns and careful timing to maximize yield. Furthermore, it is probably an

⁶¹ Together with an interdisciplinary team I carried out a pilot study on salt mining in the High Atlas in September 2023. My knowledge of different salt extraction techniques is based on this pilot study and further research into the topic.

⁶² The tanners at *dār dbāgh* use the *tashelhit* -term “*tamazirt*” to refer to their hometowns in the region of Taroudant.

⁶³ See https://en.wikipedia.org/wiki/Ourika_River#/media/File:Salt-pans_near_Marrakech_2.JPG (accessed 2025-06-24).

⁶⁴ Two studies have been found so far in relation to salt extraction by using ponds dating back to the French Protectorate period. They are written by A. Ruhlmann who studied the “exploitation indigène de sel” in the valley along the *oued Beht* in the Middle Atlas. See Ruhlmann 1937; 1938.

important source of income for the local communities whose members' (tacit) knowledge in relation to it is passed down from generation to generation.

The next material thematized is quicklime (*jar*) used for the liming of skins which originate from and is produced at the outskirts of Marrakech. For liming, this is mixed with sodium sulfide (named by the tanners with the French term "*sulphate*") which is acquired by the individual *m'ellem* from the specialized *hwanet*, either in 25 kg bags or in smaller amounts filled into common plastic bags. The decision for this purchase variation relates to the economic situation of a *m'ellem* and/or availability of storage space as sodium sulfide should not be exposed to sunlight and high temperatures. Usually, it is acquired on the day on which it is needed and brought by an individual deliverer or picked up by one of the tanners directly at the *hwanet*. Identified through labels on the plastic bags filled with sodium sulfide it gets imported from countries such as Spain and China. It is an additional ingredient which the tanners started to use after Jemma's research in the 1960s. It is mixed with quicklime which is sold, shredded in 50-kilogram plastic bags, at the specialized shops along the quarter's main street as big amounts are needed for crafting leather. The production of quicklime is strongly connected to the Moroccan waterproof lime plaster named *tadellakt* (the term derives from *tashelhit*), used for covering walls and floors. According to archaeological evidence, lime has been used in different forms for building construction all over the world since more than 10.000 years, probably humans started to use this material even earlier. Early traces of lime plaster have been discovered at Catal Hüyük, Turkey, dating from 6000 BCE and at other sites in the Levante, Israel/Palestine and Syria. Historic and archaeological studies mainly focus on lime plaster, primarily its manufacturing and use in Europe and the Near East. Lime is under researched for regions such as North, East and West Africa, South America and Asia (Carran et al. 2012, 117–18, 132–36). But let us focus again on *tadellakt*, which would give generally an interesting object of study for lime plaster production and use in North Africa. In pre-colonial Morocco it was used for covering outer walls of the Almoravid *Qubbat*, then for the ablution spaces in the Hassan II Mosque in Casablanca or more generally for a *hmmam*. The use of the Moroccan lime plaster almost disappeared in the 1970s, but had a revival as it was more and more used in the restoration of old *riaḍs* in the medina of Marrakech. Also, the tanners use this lime plaster to fix cracks in walls in the tanneries if necessary. Besides water and black soap (*ṣabūn bldi*) made of black olives (*zitoun*) and oil (*zit dyāl zitoun*), pulverized slake

lime is needed to produce *tadellakt*. The waterproof characteristic of the Moroccan lime plaster comes through adding the *ṣabūn bldi* (local soap) and olive oil. To get the slake lime the limestone must be burned in kilns. Around Marrakech 20 traditional kilns are still in use today where locally extracted limestone is burnt at temperatures between 850 to 1300°C. This results in quicklime which is needed in the tanneries for liming (El Amrani et al. 2018, 754–56; Daddis 2011, 13–29). After burning, the quicklime gets shredded, roughly sieved and filled in plastic bags to sell them further to the specialized *ḥwanet* in the tannery quarter. For getting the slake lime used to produce *tadellakt* the quicklime is mixed with water by what is called “slaking”. The use of *jar* in the leather craft represents a continuity, dating back even before the times when Jemma conducted her research. As some of the (pre)-protectorate literature shows, *jar* was a stable ingredient in all documented Moroccan tanneries (see e.g. Rene-Leclerc 1905; Joly 1906; Ziegler 1928; Hardy 1938). The importance of quicklime for Marrakech's leather craft in pre-protectorate times is also demonstrated by an old map⁶⁵ drawn in 1899, archived at the *Bibliothèque nationale de France*. It shows all “*feur à chaux*” around Marrakech and one of the production sites is directly in front of the gate *Bāb Dbbāgh*, probably providing quicklime for the potters, brickmakers and the tanneries nearby (see Service géographique de l'Armée 1912). As we already know, there is a long-lasting connection since the 12th century. Another interesting connection between the material *tadellakt* and the tanneries is that it has been used in the past to cover the walls of the *merkel*, the high-above basin for washing the skins what was already in use during Jemma's research (Jemma 1971, Appendix). The tanners themselves put the lime plaster on the inside of the rectangular-shaped basins to make the walls waterproof. The *tadellakt* on the inner walls was renewed, when necessary, by the tanners.

The next ingredient which continued to be used in leather craft, and probably the most famous one, are pigeon droppings (*bzāq*) for the bating step to delime the skins. Techniques of artificial bird breeding and nesting – ranging from wickerwork cages to elaborate dovecotes – have long existed across the Islamic and Mediterranean world, as much as elsewhere such as in Middle and Northern Europe, India, China and Japan. In Morocco the artificially enhanced breeding of pigeons remains present and visible on rooftop terraces where pigeon cages are common and also practices for training the birds can still be observed. So these are instances of raising

⁶⁵ Due to copyright restrictions, the map could not be reproduced in this work but is available online at <https://gallica.bnf.fr/ark:/12148/btv1b52509866n/f1.item.r=marrakech.zoom> (accessed 2025/05/22).

semi-domesticated pigeons. For leather manufacturing, the primary value of pigeons lies in their dropping, while a previous secondary value was that the birds provided meat and eggs for tanners who lived in the tanneries. Provision of meat and eggs are still the main purposes for breeding pigeons in Morocco today. Jemma wrote that “[...] les tanneries, comme les demeures des ouvriers et des patrons, étaient-elles autrefois, habitées de nombreux pigeons. Le tanneur était en effet réputé pour être un grand éleveur de pigeons [...]” (Jemma 1971, 114). Today an active dovecote can be found at *dār dbāgh kbīra*, where the tanners still collect the droppings used for the bating (see Fig. 23, b). Another material trace for practices of artificial pigeon nesting was found during the mill excavation at *dār dbāgh Ādouar* in form of four firmly walled-in pottery vessels (see Fig. 23, a). The vessels are middle-sized lidded jars and jugs, likely shaped by turning or a mixed technique. They are embedded in pairs roughly in a horizontal line while their openings are outward and got widened after being walled. As they are still fixed in the wall, it is difficult to date them. Based on visible shape and decoration it can be tentatively assumed that the pottery dates to the post-medieval period, most likely from the early modern period starting in the 16th century for this region. That birds still use the vessels as artificial nesting sites was confirmed by twigs, feathers, and bird nest remains, a function also affirmed by the mill’s owner who is himself a *m’ellem dyāl jeld* (Reitmaier et al. 2024, 396–99). At *dār dbāgh* the tanners purchase pigeon droppings from local breeders who are aware that it is needed in leather craft and who sell them directly to the *m’ellemen*. The breeders deliver the droppings in plastic vessels with their cars to the tannery. Sometimes sellers cheat by mixing in chicken droppings, which is hard to identify in the vessel before the droppings get in contact with the skins. By themselves chicken droppings can be too aggressive and ruin skins during bating, as the older *m’ellem* explained to me referring to cattle skin. In other tanneries it could be observed that the pigeon droppings got replaced with industrial ammonium sulfide for deliming skins, which is also part of the assortment of the specialized *ḥwanet*. It gets produced and packed in 40-kilogram bags in the Moroccan city El Jadida and transported to Marrakech.



Fig. 23: a) Orthophoto of the wall showing pottery vessels used as artificial bird nesting sites at dār dbāgh Ādouar (Photo: Călin Șuteu, Gigapixel Art, Marrakech, February 2024); b) pigeon dovecote at dār dbāgh kbīra (Photo: V. Immervoll, Marrakech, February 2024, edited by the author)

The other ingredient used for a second deliming step after bating is wheat bran (*nokhāla*). In the wider Moroccan context, different types of wheat are not only needed for bread (*khobz*), but also to produce couscous (*kesksu*) which holds an important place in the Moroccan and, generally, in the Maghreb cuisine (Aylwin 1999, 57–58). Morocco's wheat cultivation has been severely affected by recent and current droughts. This is why a lot of wheat is imported, for example from the European Union – France as top wheat supplier followed by Germany – or Canada, and Russia also is increasingly becoming a key wheat supplier for Morocco (see Simpara 2024; Unknown 2025). Wheat processing has been heavily industrialized in recent decades. Even though advanced milling technologies and grain analysis methods applied by the Moroccan *Fédération Nationale de la Minoterie* are established, hand rotary querns can still be found in some, often rural Moroccan households where this work is carried out mostly by women (see Alonso 2019; Ajansı 2018). Also in the

past, wheat mills based on different technologies⁶⁶ played an important role in ensuring the increasing population's need for flour and bran. Therefore, different kinds of mills driven either by water or by animals were all over the city of Marrakech (Lambert 1868a, 441–42; Lenz 1884, 258). The significance of mills for the leather craft is thematized more detailed in the excursus at the end of this subchapter which consists of a synthesis between archaeological and anthropological (or ethnographic) data (see page 101). For extracting the bran in a manual way the wheat grains are cleaned, soaked if needed, and grounded between two circular mill stones. The grinding process crushes the entire grain, producing a mixture of flour and bran. This mixture is then sifted using hand-operated sieves or bolting cloths to separate the finer white flour from the coarser outer layers of the grain, which constitutes the bran (Alonso 2019, 4314). Bran is also needed to feed animals, or even for medical purposes and cosmetic products, but in the leather craft as well. It is purchased in 40-to-50-kilogram bags at the *ḥwanet* in the tannery quarter and usually gets delivered to *dār dbāgh* where it is stored in the workshops to protect it from humidity and heat. At last this leads to the most essential ingredient for the leather craft: these are the different types of vegetable tanning agents. The use of cork oak bark (*dbagh*⁶⁷) and acacia bark (*mimosa*) has continued in Marrakech's leather craft since Jemma's investigations in the 1960s. As already pointed out at the beginning of this subchapter, Jemma gives spare information about materials. What she mentions in more detail are the common tanning agents for North Africa. Most specifically, cork oak bark (*r-rbati*) was collected in the forests around Rabat, but also pine root (*tayda*) and acacia bark (*acacia mimosa*). Last but not least Jemma also mentioned the meanwhile vanished *takkut*, which I want to discuss in more detail here since it got almost has become forgotten as a tanning agent (Jemma 1971, 39). More specifically, *takkut* refers to the gall of the *tamarix articulata*, more commonly known as tamarisk tree or salt cedar. The *tamarix articulata* is one out of 54 species of the *Tamaricaceae* family and widespread in (semi-)arid regions from the Mediterranean to southern Africa, and from Arabia through Iran and Pakistan to Central Asia. Depending on the environment, the tamarisk tree sometimes grows in the form of bushes and is highly salt tolerant what makes this plant perfectly adaptive for horticulture in desert environments.

⁶⁶ For an insightful overview of mill technologies in connection with flour/bran, oil and sugar production in Islamic regions see al-Hassan and Hill 1992, 212–26.

⁶⁷ This *darīja* term refers today mainly to cork oak bark as tanning agent but can be also used as general term for other tanning agents in the leather craft.

Single tree elements such as the gall, bark and twigs are mainly known for their medical use against rheumatism, for the treatment of wounds and abscesses or against effects of the evil eye (Ghazanfar and Wickison 2023, 128–31). The galls, which have a size similar to chickpeas, are an abnormal growth on the tamarisk tree, formed whenever gall-wasp eggs are deposited on tree branches. After the larvae become mature insects, they escape by boring a hole into the gall. Lesser known is the use of the galls as tanning agent, which usually contains 10% of tannins and is therefore not strong (see CAMEO 2022b). Jemma informs us that in Morocco *takkut* was harvested in the regions of the Draa Valley (*takkut drawa*) the oasis of Tafilalet (*takkut filala*) and in the Todgha gorge (*takkut todgha*). In Marrakech *takkut* was mainly used to tan sheep and goat leather which then got more whiteish as a ground color for further dying with colors like yellow or purple (Jemma 1971, 39). Nevertheless, it is still strongly present in the collective memory of the older generation of Marrakech's tanners, who reacted surprised when I asked them about this *dbagh bldi*, as we defined it in our conversations. The youngest generation of tanners had no knowledge about this tanning material. This brought up the situation that the older tanners explained to them (and me) *takkut* and how it was prepared for its use in the leather craft. Based on these conversations I know that *takkut* was prepared for tanning either by grinding it with a mill – thematized in more detail in the excursus – or through a mortar by hand. It was practiced in a bucket named *shekfa*, which is shown on a historic photograph of W. Mittelholzer (1932)⁶⁸, practiced in a tannery in Fèz:



Fig. 24: "Teil einer Gerberei in Fès" (1932), Photo by W. Mittelholzer (Photo Credit: ETH-Zürich, Bildarchiv, Inv.No. LBS_MH02-13-0321)

⁶⁸ For more background information on W. Mittelholzer see Lugon 2013.

C. Ziegler also described in his *Étude sur la Tannerie et les Industries connexes au Maroc* (1928) the grinding technique for *takkut* by mortars (Ziegler 1928, 92–93). In literature of the (pre-)protectorate period *takkut* is mentioned as a main tanning agent in the tanneries of Rabat, Salè, Fèz, Meknès, Tangier and Tétouan (Rene-Leclerc 1905, 189; Joly 1906, 215–16; Brunot 1923, 89; Ziegler 1928, 12–16; Le Tourneau and Paye 1935, 189; Hardy 1938, 193–95). In relation to *takkut* from Tafilalet, the French *contrôleur civil* A. Hardy mentioned: “Les Aït Attab se sont fait de sa vente une spécialité et viennent le vendre à Rabat où les tanneurs de Salé vont se fournir.” (Hardy 1938, 195). He informs us that members of the *Ishelhin* tribe of the Aït Attab (or Aït Aâtab) were specialized in the trade of *takkut* from Tafilalet and sold it on the Atlantic coast in Rabat. Today the territory of Aït Attab – easily reachable from Marrakech or Beni Mellal, Casablanca or Rabat – is named after the tribe and located in the Azilal province in the Central High Atlas. The tamarisk gall was also transported from Southern and Southeastern Moroccan regions to Marrakech, where a *funduk*⁶⁹ was established for trading *takkut* at *dār dbāgh kbīra* and even named after it (Jemma 1971, 74, 67). The *takkut* traded in Marrakech was known for having one of the best qualities in the country (Le Tourneau and Paye 1935, 218). Why *takkut* vanished as tannin is will be thematized in the CO-section of the tanning stage further below. The second vegetable tanning agent which is still present in Marrakech’s tanneries is the bark of the cork oak (lat. *Quercus suber*), belonging to the plant family *Fagaceae* (see Fogg 2023). Its use as tanning agent has as well a long history in Moroccan leather craft and holds its significance until today. Today the tanners usually refer to it as “*dbagh bldi*” and all three types of leather are tanned with *dbagh*. O. Lenz, the Austrian-German colonial cartographer already discussed, mentioned the economic and industrial importance of Moroccan cork oak forests and its exploitation in his book from 1884. Cork oak forests have existed around Tetuan and Ceuta, where Spanish barkers – the term for a person who collects the bark – illegally harvested bark and smuggled it by ship as exports officially were prohibited by the Moroccan Sultanate back then (Lenz 1884, 59, 409). Cork oak bark was the most important tanning agent for the leather industry in Europe until the establishment of chrome tanning in the late 19th century. The overexploitation of native European cork oak for-

⁶⁹ From class. Arab., *funduq*: In Marrakech existed two types of *funduk*, the first type has been caravansaries to accommodate merchants and their animals, while others served as warehouses including shops and workshops of craftsmen. Until 1972 around 132 *funduks* still existed in the city’s medina (Wilbaux 2001, 116–17).

ests resulted in a supply shortage for this tanning agent, which could be a reason why Spanish barkers collected and smuggled it out of Morocco. Especially the tanneries in Spain, Portugal and Corsica used the bark of the *Quercus suber* (Higham 2006, 86; Falcão and Araújo 2018, 1081). On his way from Tangier to Rabat O. Lenz came across the so-called Maamora forest⁷⁰ which consists mainly of cork oaks. He wrote: “Südlich von uns liegt der kolossale Korkeichenwald Mamora, ein schwach hügeliges Terrain, am Nordrande mit Teichen und Sümpfen, der ausschliesslich in den Händen der Scheluh (Berber) ist, die sich noch bis heute fast unabhängig vom Sultan erhalten haben.” (Lenz 1884, 190). This passage informs us that the “Scheluh”, who we define today as tribal groups of the *Ishelḥin*, inhabited the Maamora forests between Rabat and Meknès. About 140 years later, the tanners at *dār dbāgh* acquire the cork oak bark through their tribal connections to other *Ishelḥin* living and harvesting the bark in the area between Rabat and Meknès. Tanners pay around 340 DH for one bag of 40 kilograms. But the ecological balance in the Maamora forest is under pressure due to recurrent droughts, an age class imbalance of trees, illegal harvesting of other forest products (e.g. timber), demographic growth and overgrazing by livestock. Between 1952 and 2016, the cork oak area in the Maamora forest decreased by around 35%. Moreover, irreversible damage to cork oaks can be caused by wrong bark harvesting practices which mostly kills the trees (Laaribya 2023, 56–58). In general, the bark is harvested between spring and early summer when the percentage of tannin is at its peak, i.e. from trees which are twelve to fifteen years old. Unfortunately, there are no (ethnographic) sources available about local harvesting practices of cork oak bark in the Maamora forest. After harvesting the bark, it gets dried and ground into powder containing around 6-17% of tannins (Falcão and Araújo 2018, 1081). The amount of tannin in the bark is strongly influenced by the weather, tanners explained to me. When the winter season is rainy, the bark has less tannins inside. This becomes visible through a brighter brownish color of the bark pieces. Moreover, wrong storage practices can lead to a decrease in tannins: this is why the bark is usually put inside the *ḥwanet* of *dār dbāgh* to hide it from sunlight, heat as well as humidity or – even though it is not often the case in Marrakech – from rain. The overexploitation of the cork oak bark was already a prob-

⁷⁰ A hundred years earlier, the Maamora forest was also mentioned by the Danish government official G. H. Høst who wrote the following passage: “[...] den auf der östlichen Seite des Landes [...] ist ein Mangel an Bauholz, wenn man einen kleinen Eichenwald zwischen Mehedía und Elaráisch ausnimmt.” (Høst 1781, 265). “Mehedía” is a former name of the town Mehdyia in today’s Kénitra Province near Rabat and “Elaráisch” refers to today’s Larach province in Morocco’s north.

lem during the French protectorate period in which the Forestry Administration undertook regulatory steps to ensure the forest's regeneration. This meant for the tanners, specifically for the *m'ellemen* who were responsible for acquiring the tanning agent, that they paid the French Forestry Administration for a permit for gaining access to a set quantity of cork oak bark from the Maamora forest. Before, the tanning agent was sold at the *sūqs* by the local barkers, at least this was the case for Rabat and Salè (Brunot 1923, 88). It is likely that this restriction also affected the tanneries in Marrakech. Besides water, cork oak bark is the most expensive material needed for leather production. Other tanneries I have visited completely replaced the local harvested cork oak bark through a tanning agent called *mimosa*, named *acacia mimosa* during Jemma's research. The plant (*tashelhit*: *lfess*) is commonly known as black wattle (lat. *Acacia mearnsii*) and belongs to the plant family *Fabaceae* (see Henderson 1990). Both tanning agents, the cork oak and black wattle bark, continued to be used for the tanning of all three types of leather in Marrakech's tanneries since the 1960s. The black wattle is cultivated in South Africa since 1864, mainly to overcome the European lack of cork oak bark and is still a main tanning agent in Europe's leather industry. Compared to *takkut* and *dbagh*, *mimosa* is significantly stronger with an average of 22-48% of tannins (Falcão and Araújo 2018, 1081). For today's leather production in Morocco, the *mimosa* is imported in 40-kilogram plastic bags from Brazil, Turkey and South Africa through the Port de Casablanca and the tanners refer to it as "*dbagh romy*". It is the cheapest tanning agent with the highest concentration of tannins available, sold in the specialized shops of the tannery quarter. The constant availability of this product due to imports and the cheaper price leads more and more to the replacement of cork oak bark as the local tanning agent. Based on the information of February/March 2024 one 40-kilogram bag of cork oak bark had a price of 550 DH. In comparison, black wattle bark had a price of 340 DH per one bag of the same weight. Moreover, *mimosa* has the advantage of being a stronger tanning agent. This means that the tanners need fewer amounts to reach the same result. This fastens the tanning stage, and less work effort is required.

Excursus: Mills in Moroccan Leather Craft

In early February 2024, during the first campaign of the research project “*dbagh*”, a mill (*rḥa/tashelhit: azerg*) was partially excavated and documented at the tannery *dār dbāgh Ādouar* in the Eastern medina with the owner’s consent, the assistance of several tanners, and in collaboration with the archaeological team⁷¹ led by T. Reitmaier. As the architectural remains of the mill are rapidly deteriorating and the surrounding walls were severely damaged by the September 2023 earthquake – likely to collapse or be demolished soon – this excavation can be considered a rescue excavation. In addition, conversations were held with the tannery owner⁷² (see Fig. 26, a) and with tanners at *dār dbāgh* to gather further information about mills in relation to leather craft, thereby enriching the archaeological findings with ethnographic knowledge. During subsequent visits, a second abandoned mill, located within a specialized *ḥānūt*, was discovered nearby and photographically documented using a terrestrial laser scanner (Reitmaier et al. 2024, 399–400). According to discussions with the owner of *dār dbāgh Ādouar* and with locals in the tannery quarter, the first mill remained in use until around the 1970s, while the second continued until the 1980s or early 1990s. Older tanners at *dār dbāgh* also recalled that during their childhood and youth – between 30 and 50 years ago, depending on their age – one of these mills was still operational.

The main function of the mills was to crush tanning agents such as *takkut* or *dbagh* for tanning skins. Jemma also wrote about the mills in relation to leather craft in both her ethnography and her doctoral thesis, as will be discussed further below. She even provided a detailed drawing of the individual mill components (see Fig. 25, c), which was reviewed and confirmed together with the tannery owner. The terminology generally derives from the *tashelhit* of the *Ishelḥin*. The mill was owned by a wealthy landowner from the *Ida ou Zeddout*, and the mill workers also came from this tribe, reflecting a certain supremacy within Marrakech’s leather craft (Jemma 1969, 243–44). The tannery owner likewise recalled that the mill had been owned by a “patron”. Historical (pre-)protectorate sources also mention mills related to leather craft. In

⁷¹ The archaeologists who participated in the excavation besides T. Reitmaier (University of Zurich, Switzerland) have been Raphael Sele (Independent, Switzerland), Daniel Möckli (Independent, Switzerland), Călin Șuteu (Gigapixel Art, Cugir, Romania) and Abdallah Fili (Université Chouaib Doukkali, El-Jadida, Chaire EMARA, UM6P, Morocco).

⁷² The Moroccan artist Hanane El Farissi assisted me with translations during the conversation with the owner of *dār dbāgh Ādouar*.

1905, C. Rene-Leclerc noted in his account of the leather industry in Fèz that there were two mills in the city for shredding tanning agents (Rene-Leclerc 1905, 188). For the leather craft in Tetuán, tanners cooperated to grind *takkut* in mills that were primarily used for wheat, as reported by A. Joly (1906, 215). According to L. Brunot, Rabat had two animal-powered mills, each specializing in either *takkut* (*rḥa dyāl takkut*) or *dbagh* (*rḥa dyāl dbagh*). Their components and functions were identical to wheat mills (Brunot 1923, 89, 102–3).



Fig. 25: a)/b) Archaeological documentation of the tannery mill at dār dbāgh Ādouar (Photo: T. Reitmaier and R. Sele, Marrakech, February 2024), c) Illustration of a mill and related terms (after Jemma 1971, 40, Fig. 15)

More detailed descriptions of tanning agent mills – including a *plan schématique d'un moulin à tan* illustrating the structure of a water mill, along with notes on purchasing practices, division of labor, and working conditions – are provided by Le Tourneau and Paye (1935, 219–21) in their study of leather craft in Fèz. The sale of cork oak bark as a tanning agent took place at these mills. Delivered in plaques (*qšūr*), it was

either purchased directly by a *m'ellem* or by the mill owner. In the case of custom grinding, the *m'ellem* negotiated with a seller (not the mill owner) and bought the required amount of cork oak bark. The seller then instructed the mill owner to grind this quantity, paying him for the service, after which the ground material was delivered directly to the tannery. In the second arrangement, the mill owner bought cork oak bark in bulk, ground it, and resold smaller quantities to tanners. Whereas in 1905 there were two such mills, thirty years later their number had grown to four – two water-powered and two animal-powered. This report also highlights the specialization of mills, which structurally resembled wheat mills but were adapted to process specific tanning agents, either *takkut* or *dbagh*. It becomes clear that strict separation of materials was essential not only within the tanneries, to avoid interfering with leather-making, but also in the milling process. The owner of *dār dbāgh Ādouar* similarly emphasized that great care was taken to prevent mixing ingredients, whether during grinding or later during leather crafting. Le Tourneau and Paye further note that each mill employed two to three workers. Their tasks included breaking *qšūr* with wooden mallets and spreading the pieces out on the terrace to dry in the sun. Tamarisk galls were likewise dried before being crushed in the mills. Work was carried out daily except Fridays under extremely harsh conditions: “Leur tâche est pénible parce que le tan et le tākāūt dégagent une poussière très abondante, extrêmement âcre et pénétrante; les ouvriers doivent se voiler la bouche et le nez pour éviter de trop en absorber.” (Le Tourneau and Paye 1935, 221). Although no direct references to mills in Marrakech have been found in (pre-)protectorate sources, some of the practices described above can likely be applied to the city’s leather craft. In her ethnography, Jemma mentions one tanning agent mill specifically in relation to the preparation of *takkut*, which was carried out by the tanners’ wives. They sprinkled the galls with oil – probably olive or argan oil – then sorted them and placed them in basketwork trays to transport them to the mills. Her ethnography includes a photograph showing a woman performing this task (Jemma 1971, 39–40; 41-Fig.16). Curious about women’s involvement in the craft, I showed this picture to older tanners at *dār dbāgh*. They confirmed that it indeed depicts a woman from behind and that they remembered women’s involvement in preparing *takkut* inside the *funduk* at *dār dbāgh kbīra*. At the same time, they emphasized that much has changed since then, and today women no longer participate in the craft. Returning to the archaeological excavation of the mill at *dār dbāgh Ādouar*, several of its parts remain preserved in situ. The most strik-

ing feature is a horizontally oriented palm trunk, about 6 m long, whose ends are firmly set into the walls of the building (see Fig. 25, a). When operational, this trunk spanned the interior at a height of roughly 2.5 m above the clay floor in a room called the *adohan* (Jemma 1969, 243). Today, however, the ruins are filled with 1–1.5 m of debris, including rubble, bricks, and modern refuse (plastic, iron, etc.). In the largest trench (3.5 × 3 m), excavated directly beneath the trunk, the slightly oval bedstone with its brick substructure was uncovered. The bedstone is 3–6 cm thick, about 1 m in diameter, and pierced at the center. Its roughened surface bears pick marks and grooves, some later worn smooth through grinding. The circular substructure, only partly excavated and measuring about 2.5 m across, consists of flat-laid bricks and quarry stones. It rises unevenly from the neatly plastered outer edge toward the central bedstone. Because bricks and mortar have broken away, its original form cannot be precisely reconstructed. Other mill elements were found displaced nearby and were documented with photographs and drawings. For instance, the granite runner stone now leans against the west wall of the ruins; it measures 1.2 m in diameter, 30 cm thick, with a central hole 23 cm wide. A wooden beam, 2 m long, was also recovered from the rubble. According to Jemma's description, it was made of olive wood (Jemma 1969, 243-244-footnote 5). Originally, it stood vertically on the bedstone, secured at its base by an iron pin set into the stone slab. At the top, it was fastened to the horizontal palm trunk using small wooden pieces, forged iron nails, and probably ropes, which allowed it to rotate on its axis. The vertical runner stone rested on the bedstone and was connected to this wooden beam. A rectangular recess indicates where a missing crosspiece had once been attached, extending outward through the runner stone's central hole. This crosspiece acted as a lever for the pivot, enabling a draft animal – likely a mule (*aserdun*) – to turn the runner stone in a tight circle over the bedstone. No artifacts or stratigraphic layers were uncovered that could provide a precise date for the mill, but it can reasonably be assumed that the building was constructed in the 19th century (Reitmaier et al. 2024, 392–94). In a footnote to her doctoral thesis, Jemma provided a very detailed description of a mill with its parts, measurements, and related terms, which ultimately confirmed the construction and function of the excavated mill:

“La grande pièce haute et sombre dans laquelle s’effectue le broyage des différentes espèces d’écorces, racines ou galles se nomme adohan. Elle est traversée par une grande poutre constituée par un tronc de palmier et appelée

meimuna, du nom de l'esprit invisible qui habite le lieu, du nom également de la sainte (lalla meimouna) dont le sanctuaire est situé en face de bab debbaq (la Porte des Tanneurs) sur la rive de l'wad issil. Perpendiculairement à cette poutre se meut l'axe mobile (d'une hauteur de 1.80 m environ) en bois d'olivier nommé sif, l'épée, et fixé à la poutre maîtresse par un système de verrous et de cordages également désigné sous le nom de meimuna. Contre l'axe mobile est posé sur la tranche, la grande meule de pierre azerg (d'un diamètre d'1.20 m environ), maintenue par une sorte de verrou (lused) et fixée contre l'axe par une petite roue de bois plein (sandūq = boîte), elle-même fixée par deux chevilles. Dans le centre commun de la meule et de la roue de bois passe un axe horizontal mobile nommé lamejerl, auquel est attaché le mulet asserdun qui actionne l'ensemble. A cet axe est en outre attaché une sorte d'éventail en palme tressée nommé tasafrurt. Cet éventail traîne sur la base circulaire en pierre (amsir) d'un diamètre de 3 à 3.50 m environ et surélevée de 60 cm par rapport au sol. Sur cette base circulaire qui supporte l'ensemble de la meule et des axes, est éparpillé le produit à moudre. L'éventail, en suivant le mouvement de l'axe horizontal mû par le mulet, rassemble les débris d'écorce qui, éparpillés hors du champ d'action de la meule, n'auraient pas été broyés." (Jemma 1969, 243-244-footnote 5)

The second documented mill in the tannery quarter (see Fig. 26, b) shows similarities in structure and function to the first mill as well as to Jemma's descriptions, though only certain parts are preserved: the palm trunk (*meimuna*), the wooden connecting elements (*sif*, *meimuna*, *lused*, *sindog*), the rotating axle (*lamejerl*), and the running stone (*azerg*) (Reitmaier et al. 2024, 399–400). Finally, it should be noted that in her dissertation, Jemma referred to the existence of one animal-powered mill and two mechanically operated mills in Marrakech's tannery quarter (Jemma 1969, 243-244-footnote 5). She did not, however, mention this point in her 1971 ethnography, which suggests that she chose to emphasize only the "traditional" processing of tanning agents, disregarding the shift from "ancient" to more "modern" technology. Moreover, her works contain no detailed information about the function or individual components of the mechanical mills. Whether there were two or three mills, and whether they were mechanically or animal-powered, could likewise not be determined during conversations with the tanners. This may remain unresolved, since, as we know, apart from Jemma's ethnography, there are no other descriptions of the leather craft

in Marrakech for the post-protectorate period. Drawing on historical sources, ethnographic information, and archaeological findings, however, we can at least confirm the existence of two mills in the tanners' quarter. These were essential for processing the two different tanning agents required for leather crafting. Additionally, more information about the work organization of former mills in Moroccan leather craft and preparations of tanning agents could be gathered to complement the archaeological findings.



Fig. 26: a) The owner of *dār dbāgh* Ādouar in conversation with the researcher (Photo: T. Reitmaier, Marrakech, February 2024), b) second documented mill in the tannery quarter (Photo: T. Reitmaier, Marrakech, February 2024)

Washing

Let us now come back again to the production process of leather. After raw skins of all three types have been purchased at the *sūq jeld* along with the necessary ingredients, the first work step that takes place inside the tannery is the washing (*sherish*) of cured raw skins. They are washed (CO-No. 2) and soaked before liming to remove blood, dirt, manure, salt, and other surface contaminants accumulated during slaughtering, storage or transport. Soaking rehydrates the skins, restoring their original moisture content and softening the fibers, which is essential for ensuring the effect of liming. Without proper soaking and washing, the lime cannot act effectively. In turn, this would lead to uneven results or damage in later stages of tanning (see al-Wakili et al. 2023a). In general, this task can be done for all three types of raw skins either

by the *m'ellem* himself or by a *m'tellem*. Typical for cattle skins is that a *m'ellem* and *m'tellem* work together due to the heavy weight of the skins. Only in rare cases does a *m'ellem* carry out this task all alone, for which a lot of physical strength is needed. Before washing the raw skins, the workspace must first be cleaned. For this, the inner walls of the high-above basin (*merkel*), as well as the surrounding ground, are sprayed down with a water hose, and then the floor is wiped clean with a floor squeegee. These squeegees can be purchased in any small shop for household items in the medina. In *dār dbāgh*, there were a total of three squeegees, which were shared by all tanners. They can be defined as additional equipment beside tools for cleaning workspaces. Then, approx. one-third of the basin is filled with water from the municipal water system coming from a hose fixed on a tap next to the *merkel*. The basin has a drainage hole which is plugged with textile pieces or leather scraps. When drained, the brown-colored water flows through a narrow water channel on the surface into the normal municipal canal system. While the basin fills, the raw skins are loaded into a wheelbarrow at their storage space and transported to the *merkel*, where the tanner unloads them. Care is always taken to free up the wheelbarrow for further use by other tanners, as only two were available in total and were shared among everyone at *dār dbāgh*. Wheelbarrows thus also represent an additional, communally used equipment in Marrakech's tanneries. Usually there is always a fixed number of skins being processed. For goat and sheep skins, it is between 100 and 150 pieces, and for cattle, it is typically between 48 and 50 pieces. If the raw skins are from calves, then even up to 60 pieces are washed and soaked in the basin. Throughout the leather crafting process, the number of skins per work step and per basin or vat remains the same. This consistency is also important to ensure that approximately the same quantities of the respective ingredients are added for each step. Jemma briefly mentions that for goat skins, the number per basin was about 48 pieces – 8 *tarha* bundles with 6 raw skins each (Jemma 1971, 33). For sheep and cattle skins, she gives no exact numbers but by comparison, the number of processed goat skins per basin/vat has doubled or even tripled since the 1960s. At *dār dbāgh* the older tanners specialized in crafting cattle leather said that from the beginning, they learned to put between 48 and 50 pieces of cattle skin and about 60 pieces of calf skins in a basin/vat. Therefore, it is likely that around 48 to 50, or for calf skins up to 60 pieces were processed also in the past.

Let us begin with the washing and soaking of goat/sheep skins. For this step the tanners put on their hop waders which are cleaned with clear water and are partly already destroyed in some parts. To avoid that liquids touch the tanners' skin, they put on socks, cover them with plastic bags and then slip into their waders. Most of the tanners told me they are not able to afford new ones, as costs (1400 DH) are too high. Nevertheless, washing and soaking start after skins have been brought to the *merkel* with the wheelbarrow. They are then placed over the basin's edge so that the tanner, standing inside the basin, only must pull the skins down (see Fig. 27). The goat skins then are submerged in the water turned over, with the flesh side out, and dragged through the water from the right side of the basin to the left. Then they are pushed downward, before the same procedure is repeated with the next piece. To speed up the process, the tanner sometimes handles several pieces at once. Sheep skins are also pulled into the basin from the edge, dragged through the water from one side to the other, and then pushed downward. At this point, they are pressed down using both hands or feet to release air bubbles between the skins, and to allow the water to spread evenly.



Fig. 27: A m'ellem placing calf raw skins over the edge of the merkel (Photo: V. Immervoll, Marrakech, February 2024)

To prepare cattle skins for washing and soaking, the tail must first be cut off with a knife (*mūs/tashelhit: ajenwi*) by a tanner, i.e. from the pieces placed on the ground next to the *merkel*. Nowadays, the tails are thrown away as waste, but – as the tanners told me – in the past they were resold to make fly whisks. Fly whisks can still be found in various small shops in the medina, though today, plastic strips are used instead of animal tails. Jemma wrote that camel leather was divided into two parts after purchasing and before washing them – this operation was confirmed by the older tanners at *dār dbāgh* (Jemma 1971, 50). After removing the cattle tails, the skins are put on the basin's edge. From there they are moved piece by piece into the basin. To press the air out from space between the layers, a long, thick branch is used to push the skins down at different edges from above while the tanner stands at the edge of the basin. For all three types of skins, the preparation time before soaking in the basin takes about half an hour to an hour. Sometimes it is the tanners' first morning task to wash and let the skins soak during their workday. Alternatively, the skins are left in the basin overnight and removed the following day. Soaking raw skins is a sensitive operation that requires careful control, as overly prolonged soaking can weaken the fiber structure, compromising the quality of the leather. One of the key variables is water temperature, which must be kept below 25°C to prevent the formation of wrinkles and surface damage. Tanners regulate this by soaking the skins overnight – taking advantage of cooler temperatures – or by mixing in fresh, cold tap water when necessary. Too much salt or dirt in the soaking water can also interfere with the process, prompting the decision to refresh the basin entirely (see al-Wakili et al. 2023b). However, replacing the water is considered a last choice, only used when all other adjustments fail. These decisions reflect a set of technical choices grounded in practical experience, where temperature regulation, timing, and water quality are finely balanced to maintain the integrity of the skins. Before moving on to the next processing step, skins are thoroughly sprayed on the flesh side with a water hose, in the area between the *meyjar* vats to remove all residues of salt, feces and dirt. Afterward, the *merkel* and the surrounding ground are cleaned again, removing salt grains and dirt so that the next tanner can use the high-above basin. All *merkel* in *dār dbāgh* are part of the collective infrastructure and are used communally. Most of the *m'ellemin* buy raw skins on Saturday. This does not imply that all of the skins are washed and soaked on the same day. As not all tanners carry out the same work step at the same time, there is no real conflict over the use of the basin. At most, there is a verbal

agreement about who needs the basin and when. The *merkel* for cleaning and soaking raw skins has been in use since the 1960s. Whether raw skins were washed in the *oued Issil* before the *merkel* was installed is not recorded in any literature. A historical photograph archived at the Federal Institute of Technology in Zurich (ETH Zurich) out of the collection of Swedish botanist C. Skottsberg (1880–1963), who traveled from Spain to Morocco and Algeria in 1936, offers a possible insight (Salisbury 1964, 245). The photo's title is *Marrakesch: Wasserloch vor der Stadt* (Skottsberg 1936), and at the verge of the waterhole sheep skins can be guessed, apparently being soaked in the waterhole (see Fig. 28). The soaking of skins in this waterhole is visible through the recorded leg movements of the boys showing a pressing down of the skins under the surface and the visible white spots in the water could be skins. The waterhole was located outside the city wall and may have been fed with water by the *khettara* back then.



Fig. 28: "Marrakesch, Wasserloch vor der Stadt" (April 1936), Photo by C. Skottsberg (Photo Credit: ETH-Zürich, Bildarchiv, Inv.No. Dia_282-6971)

Liming

The liming process (*meyjar*, CO-No. 3) marks the first step in preparing skins for tanning. It removes the hair, the epidermis, and the flesh and fat layers from the skin. During this stage, the skins are subjected to several treatments that loosen the connection between the epidermis and the corium, enabling the mechanical removal of

hair, epidermis, and the flesh side. The separation of the epidermis can be achieved through various methods, such as applying solutions like lime milk combined with sodium sulfide, which breaks the bond between the epidermis and the corium. This is the method used in Marrakech's leather craft. In addition, sodium sulfide breaks down the keratin in the hair follicle and root, making the hair lose for mechanical removal. The use of sodium sulfide significantly accelerates the liming process – especially the unhairing process (Sharphouse 1983, 104–8, 111–12). Liming solutions are highly alkaline and extremely caustic, which is why tanners protect themselves with specialized workwear. In conversation with the ethnologist Jemma, she asked whether tanners meanwhile wear protective clothing. During her fieldwork, tanners typically wore upper garments without long sleeves and short or cut-off pants made of natural materials like cotton or linen. In other words, no proper protective clothing was used. Today, tanners wear hip waders for liming – the same ones used for washing the skins. The tanners rinse their hip waders with clear water between the two steps to avoid cross-contamination of ingredients. Their hands are protected with standard household rubber gloves that extend to the elbows. These gloves are available at any *ḥānūt* in the medina that sells household goods. Safety goggles for eye protection never were observed. For sun protection they wear a straw hat named *taraza*.

Let us begin with goat and sheep skins, for which two different liming options are used. The first option is the faster one, more commonly used for goat skins than sheep skins although it can be applied to both types. This method is also known as “paint unhairing” (Sharphouse 1983, 97–98). One reason a *m'ellem* might choose this method is that it speeds up dehairing (*amrāsh*) and preserves the hair in good condition to be resold. To remove the hair, a highly concentrated solution consisting of quicklime, a small amount of water and sodium sulfide is prepared in a bucket or similar vessel. Afterwards goat skins are laid on hard ground near the rectangular vats with the flesh side facing outward. A broad paintbrush is used to apply the lime mixture to one side of the flesh side in right-to-left strokes. The other side is then coated as well. This task is usually carried out by a *m'tellem* or alternatively a day laborer (*ṣān'*) may be hired for the job. If a *m'ellem* needs his *m'tellem* for other tasks or wishes to speed up processing, he may hire a *ṣān'*. This is especially common a few weeks before *Ramaḍān*, when extra workforce is needed to complete as much work as possible in advance. The coated goat or sheep skins are then left covered for a day or night, allowing the lime paint to take effect and making it easy to remove

hair or wool by hand. The hair is washed at the tannery and sold to a middleman, who collects it directly and resells it to people in Southern Morocco. Goat hair is used to make ropes and tents⁷³, providing the *m'ellem* with additional income. Since goat hair tends to grow longer in winter, the lime paint method is more commonly used during that season. The dehaired skins are then placed – unwashed – into a rectangular vat filled with previously used lime solution. This step helps soften the skin's flesh layer, allowing it to be scraped off with a knife later. In summer, the skins stay in the solution for 2–3 days, and up to 5 days in winter, during which they are taken out from the vat daily to “breathe” (*tnaffas*). Before the skins are removed from the vat, another high-above basin with two separate compartments is filled with clear water. The skins are transferred directly from the liming vat into the water in the basin. The tanner, usually a *m'tellem*, removes each skin and scrapes (*assawa*) the fat layer from the flesh side using a knife. At this stage, the tanner also trims unsightly or scarred edges of the skin. The skins are then placed in the second compartment of the high-above basin, also filled with clear water, where they undergo a “massage” after all skins have been processed. “Massage” refers to the process of stomping or treading on the skins with the feet in the basin, in order to remove lime residues from the skin's pores. It is also carried out in relation to cattle skins and during other steps of the CO. Afterward, the rectangular vat and the high-above basin are cleaned. Generally, all flesh and skin residues are collected in reused plastic bags and discarded as waste. In her ethnography, Jemma describes a similar step to the first option outlined above, although it was no longer practiced during her fieldwork. In her CO she equates this step with washing and soaking in a *merkel* (Jemma 1971, Appendix). The so-called *ifred* (Jemma refers to it as *iferd*) – literally translated from *tashelhit* as “pond” – refers to a similar procedure of the first option for removing hair from goat skins. The *ifred* was located in the center of the *dār dbāgh kbīra* tannery and was filled with pigeon droppings and waste products from various stages of the tanning process (Jemma 1971, 67, 71). While the specific types of waste are not detailed, the mixture was highly caustic, or as she wrote: “Les artisans disent que l'eau fermentée de cette fosse profonde peut attaquer les peaux et les trouser. [...] Les ouvriers disent qu' << iferd touche dangereusement la peau >>” (Jemma 1971, 33). Therefore, a *m'ellem* had to monitor his skins closely to prevent damage. The goat skins were turned inside out, with the flesh side facing outward, laid over ropes, and

⁷³ G. Høst mentions that goat hair was used to make tents and rigging in the second half of the 18th century (Høst 1781, 293).

suspended into the *ifred*. They remained submerged for three days in summer and six days in winter. Afterwards, the hair could be easily removed and was sold by the tanners' wives at the *sūq le-ghzel* – the spindle and wool market in Marrakech until today (Jemma 1971, 33–34). During fieldwork, the tanners at *dār dbāgh* were asked whether they still remembered the *ifred*, but unfortunately, they no longer had any knowledge of this part of the process. The *ifred* was found on a photograph of *dār dbāgh kbīra* in Marrakech taken by the Swiss-French photographer G.-L. Arlaud around 1925:



Fig. 29: “Tanneries; Vue sur les cuves de trempage” (1925), Photo by G.-L. Arlaud (Photo credit: Ministère de la Culture (France), Médiathèque du patrimoine et de la photographie (MPP), GrandPalaisRmn Photo)

The second option for liming goat or sheep skins follows a procedure similar to that used for liming cattle skins. This is a lengthier process and therefore more time-consuming, taking up to five days in summer and as long as ten days in winter. The process begins by placing the skins into a previously used liming bath. The *meyjar* already contains lime milk, and any settled lime putty at the bottom is removed before adding sodium sulfide and clear water. Lime putty forms during slaking – the process of mixing quicklime with water – and settles at the bottom. The tanners must remove the settled lime putty as well as any hard clumps of quicklime. Sodium sulfide and water are then added and mixed in the vat by the tanners using a long wooden stick. Next, the skins are added, with the tanner counting each piece to ensure a total of 150 skins are placed in the vat. When two tanners – usually two *m’tellem* – work to-

gether, one hands the skins one by one from outside the vat to his colleague standing inside. The tanner inside the vat pulls each skin – also with the flesh side facing outward – once or twice through the solution before pushing it under the water's surface and placing it. Placement begins from right to left, stacking 50 skins at a time, counted by the tanner inside the vat. The skins are then gently massaged with feet to remove air trapped between the layers. As is often true in leather crafting, temperature control is crucial – this also applies to liming. Ideally, the first liming bath – prior to dehairing – should maintain a temperature between 16°C and 27°C. If the temperature exceeds this range, the skins may be damaged (Sharphouse 1983, 112). To help regulate the temperature, the tanners at *dār dbāgh* place plastic mats or old textile rugs over the surface of the vat after adding the skins. Temperature control is also essential in crafting cattle leather. Before the skins are dehaired – what is done relatively easily by hand with simply wiping off the hair – they must be removed several times to "breathe." To do this, the skins are lifted out by hand and laid over the rim of the vat. Afterward, the lime solution is stirred again, and the *m'ellem* checks the condition of the skins. While the skins are laid out to breathe, their transformation – from turquoise to a whitish color with a greenish tint – becomes clearly visible. After dehairing (CO-No. 3.1.), the skins are placed in a second liming bath (*meyjar jdid*, CO-No. 3.2.) in a *meyjar*, freshly prepared with a mixture of quicklime and water. Preparing the new liming bath is a crucial step, as slaking quicklime with water causes a chemical reaction that produces hot lime putty capable of burning both animal skins and the tanner's skin. The lime putty is scooped out with a bucket, and hard clumps of quicklime are filtered out. During the second liming bath, the skins are again periodically removed to breathe, the solution is stirred, and the skins are massaged with the feet. The final fleshing (CO-No. 3.3.) and washing steps are the same as in the first liming option, including cleaning the workspace afterward. At the time of Jemma's research, goat and sheep skins underwent a five-step liming process including dehairing and fleshing. The first step was similar to the present-day method and was referred to as *amssarab*. The solution of *amssarab* in the rectangular vat, although its exact composition is not described, had previously been used in other liming baths. It is therefore assumed to have been reused lime milk, which also contained ash from argan kernels – now replaced by sodium sulfide. The skins remained in the *amssarab* for two to three days in summer and four to five days in winter before proceeding to the second step – *lakhdar*. Before entering the second liming bath, the

skins were wrung out and gently stretched by two tanners. Wringing and stretching skins have completely disappeared from contemporary leather crafting in Marrakech. The *lakhdar* had already been used twice for liming skins. The skins remained there for three days in summer and around six days in winter. This third liming bath is no longer used in the present-day liming of goat/sheep skins. The goat and sheep skins were then dehaired using a tool called *hadida*, which was used to scrape off the hair. This operation – also referred to as *amrāsh* – is still carried out today, although the hair is stripped off by hand and the *hadida* has vanished as a tool. This hair was also sold by the tanners' wives at the *sūq le-ghzel*, just like the hair collected after the *iffred*. After dehairing, the skins were placed into a liming bath called *amkellt*, which had already been used once. The skins remained there for three days in summer and six in winter before being transferred to a freshly prepared quicklime bath – called *l-qat'a*. As is still the case today, rinsing the skins with clear water remained an essential step after each of the five stages. Final washing was followed by gentle stomping to remove lime residues from the skins, a step carried out in a *merkel*. What is now performed by two *m'tellem* was previously done by three to five young tanners. Jemma describes the motion for this operation as follows: “Les tanneurs foulent énergiquement les peaux trempées dans l'eau, en tournant dans le sens inverse de celui des aiguilles d'une montre [...]” (Jemma 1971, 37). This “trempées dans l'eau” of skins – referred to in this thesis as massage – was repeated four to five times before the skins were wrung out. In between, the skins were fleshed with a knife and – just like today – trimmed along the edges. The *hadida* (see Fig. 30, a) was then used to remove fat and muscle tissue – an operation no longer observed in today's practice. It is likely that the use of sodium sulfide now dissolves the fat and muscle tissue so effectively that any remaining material can be easily removed with a knife. According to Jemma, the complete liming process took about ten to fourteen days in summer and up to three weeks in winter. Compared to today, the duration thus has been significantly shortened due to the introduction of sodium sulfide. Today, tanners require up to five days for liming in summer and up to ten days in winter. What remains unchanged is that the tanners still make use of the chemical transformation from quicklime – still sourced from the area around Marrakech – into slaked lime. Furthermore, massaging the skins after liming – though now performed by fewer tanners – remains an integral part of the process (Jemma 1971, 34–37).



Fig. 30: a) the vanished tool “hadida” (after Le Tourneau and Paye 1935, 188, Fig. 4); b) two apprentices cutting edges of goat skin with knife (Photo: V. Immervoll, Marrakech, September 2023)

Let us now turn to the liming procedure for cattle skins, which is equally complex as that for goat and sheep skins. After cattle skins have been washed and soaked, they are placed into a rectangular vat filled with old lime milk (*meyjar qdīm*) that had previously been used for liming other skins. This step is referred to as *amssarab*. To strengthen the lime milk and accelerate the liming process, sodium sulfide and a small amount of clear water are added. Approx. 10 kilograms of sodium sulfide are required for 50 cow or 60 cattle skins. Before adding the sulfide, the bottom of the vat is cleared of lime putty using a bucket – sometimes self-made from the top of large plastic bottles – and like most tools, shared among all the tanners. The tanner then pours the sulfide into the old lime milk and mixes the liquid with the long wooden stick while, turning the solution a dark grey tinged with green. Next, one tanner slides the skins, piece by piece (*ansalla*), into the vat using his arms, while his colleague flattens them into place by hand. During and after this process, the tanners massage the skins with their feet. Usually, it needs two tanners – a *m’ellem* and a *m’tellem*, or two *m’tellem* – to work together during the liming, as cattle skins become extremely heavy during the process. The entire liming process for cattle skins lasts up to one week in summer and two weeks in winter. During this time, the skins are removed for breathing three times in summer and about six times in winter. For this, tanners work in pairs, removing the skins one by one from the vat with the help of hooks (*darīja*: l-

khtaf/tashelhit: akhtaff). The skins are then stacked on the ground next to the *meyjar* and left to rest for one or two hours. To avoid contaminating the lime milk with other substances or allowing the liquid to drain into neighboring vats, tanners construct an enclosure around the workspace using pieces of old rugs. While the skins are breathing, a tanner stirs the lime solution in the vat once more. Generally, *tnaffas* also allows the *m'ellem* to check the thickness, consistence, and color of the skins, which by now appear whitish with a greenish tint. Before the skins are returned to the vat, they are hosed with clear water. Once all skins are back in the vat, the tanners resume massaging them. The workspace is then cleaned again using clear water and a floor squeegee. Rags used during the process are simply tossed into the *meyjar*, where they remain until needed again for dehairing. The first liming bath is followed by the first dehairing (*amrāsh*) on the grain side to remove hair with superficial roots. This step is usually performed by two *m'tellem*, or by a *m'ellem* working with a *m'tellem*. As mentioned earlier, at certain times of the year, *ṣān'* are hired, for both the first and second dehairing operations. The cattle skins are laid on a hard surface and dehaired using a tool (*assawa hafīa*), which consists of a flat, blunt, rectangular metal blade set into a wooden handle (see Fig. 31, a). In the European context, this tool is known as a "sleeker blade" and is typically made of steel (Salaman 1986, 313). It is used to push and scrape off the hair without damaging the grain side. This initial dehairing typically takes up to a full workday to complete. The dehairing workspace is again zoned with rags to prevent cross-contamination, and the ground is cleaned after the process is completed. The removed hair is usually discarded as waste. Once a skin is dehaired, it is sprinkled with water and placed into a second liming bath (*quat'a*) made with a freshly prepared solution of quicklime and water (*meyjar jdim*). This solution is prepared either prior to or alongside dehairing, using approximately 100 kilograms of quicklime and 200 liters of clear water for 50 cattle skins in a rectangular vat. The skins are not placed into the second liming bath immediately after mixing, as the liquid must cool down first. The lime putty settled at the bottom is sieved to remove hard clumps of quicklime before the remaining water is added to the vat. As with the first liming bath, the skins are periodically removed for breathing and massaged with the feet several times. This bath is followed by a second dehairing procedure (also referred to as *amrāsh*), using the *assawa hafīa* again to remove deeply rooted hair.



Fig. 31: a) The “*assawa hafia*” tool used for dehairing which becomes the “*assawa madeya*” for fleshing after sharpening on the whetstone (Photo: V. Immervoll, Marrakech, September 2023); b) Two co-workers carrying out the second dehairing of a cattle skin (Photo: V. Immervoll, Marrakech, March 2024)

After the first and second liming baths, this operation is made easier, as the deeper roots have been fully loosened. Before being dehaired again, the skins are removed from the vat, stacked beside it, and processed piece by piece. After each skin is dehaired with the *assawa hafia*, it is hosed with water and returned to the second liming bath, where it stays for a few hours until all 50 skins have been processed. Once returned to the vat, each skin is turned flesh side up by two tanners using the *l-khttaf*. This repositioning is important so the skins are already correctly oriented for the next step, fleshing (*assawa*), when taken out of the vat. For fleshing, tanners use essentially the same tool as for dehairing, but sharpen it on a whetstone called *tahri-sha*, after which the tool is referred to as *assawa madeya*. After fleshing, the skin is rinsed with water and placed in a vat filled with clear water. At the end of the process, the tanners clean their workspace and the vat used for the first liming bath. As previously noted, the second liming bath remains in use for processing a new batch of cattle skins after they have been washed and soaked. As noted several times already, a direct comparison for crafting cattle leather cannot be drawn, as Jemma did not compile a detailed CO. Yet she does provide occasional information in her ethnography. Regarding the liming of cattle skins, she states that they passed through three previously described steps in total: *amssarab*, *amharrash*, and *l-quat'a* (Jemma

1971, 50). How exactly dehairing or fleshing was performed on cattle skins at that time remains unclear. An alternative fleshing technique was observed at *dār dbāgh* shortly before the beginning of *Ramaḍān* in early March 2024. This method involves fleshing cattle skins and trimming their edges on a so-called “tanner’s beam”, known as *s’kkin* in Morocco’s leather craft. For this purpose, a long, two-handled knife with wooden grips on both ends is used. In general, the tanner’s beam can also be used for dehairing and was traditionally made from a tree trunk, which served as a sturdy base (Salaman 1986, 299–300). Today, in Morocco, tanner’s beams are typically made from a wooden construction above which a reused flat, long plastic or metal piece is mounted, and the task is carried out by *ṣān*’ who specialize in this technique (see Fig. 32, b). The period just before *Ramaḍān* also influences whether a *m’ellem* assigns this operation to day laborers. Thereby he could be relying on this alternative technique instead of carrying out fleshing with the *assawa madeya*. In conversations, the *ṣān*’ explained that they had learned all steps of the leather-making process. Nonetheless, they chose to specialize in this particular fleshing technique as a source of income. The *ṣān*’ come from Meknès, where their families still reside, but they travel throughout Morocco to offer their specialized skills in different tanneries. R. A. Salaman gives us a lively and very exact description of the fleshing technique on a tanner’s beam: “The beamsman throws the hide over the beam and standing behind it he bends forward over the hide, pushing the knife away from himself, down the beam. The concave side of the blade lies nearest the work, and he moves the knife in a slicing action, swinging the blade diagonally across the hide; because of the curvature of the beam he cuts away the unwanted flesh and fat in strips.” (Salaman 1986, 302). This fleshing technique has already been mentioned in historic literature in relation to leather craft in Morocco. The authors describe this method as an innovation in Moroccan leather craft, which apparently originated in Europe. Whether this was really the case cannot be verified. What is known is that at the beginning of the 19th century beams were in use in other regions of the Near East as for instance in the former Palestinian port city Jaffa which has become a southern district of Tel Aviv, Israel after the Arab-Israeli War in 1948 (Milwright 2022, 143–44). In Morocco the tanner’s beam was used in Rabat and Salé for both dehairing and fleshing, but, at least in the 1920s, it was not used in the tanneries of Marrakech, Fèz, or Meknès (Brunot 1923, 93, 106, 124; Ziegler 1928, 75–76).

A rotating liming drum – called *tono* by the tanners – was installed as “modern innovation” in most of Marrakech’s tanneries during their renovation and modernization since 2010. The drum liming can be used instead of the manual liming to treat skins with a lime solution. Its main function is to loosen hair, remove epidermal layers and swell the skin’s fiber structure in preparation for tanning. Mechanical rotation ensures even exposure to the chemicals and reduces manual labor, making the process more efficient and consistent than hand methods (Sharphouse 1983, 108–9). A tanner once told me that he does not want to move modern except for the liming. In his opinion he just wants to “improve” liming by replacing the extremely exhausting and time-consuming liming by hand but would stick to the rest of the “traditional” leather crafting procedures. As already mentioned, liming by hand takes a few days up to one week, whereas with the *tono* this stage would be done within a few hours. Moreover, it requires less quantity of quicklime. When the liming drums were installed, the government also made sure that the tanners got access to the technical knowledge relating to it. Therefore, they sent a Spanish tanning specialist from tannery to tannery to teach the tanners the new technic. Nevertheless, during field research I never saw this liming drum being active and therefore got curious about why it stands still the whole time even though the tanners would be open to use it and have the knowledge to do so. The main reason is actually that maintaining the *tono* involves high costs for water and electricity. To work with the *tono* a huge amount of water is needed. In times of high water prices and scarcity it would not be affordable for the tanners to switch to this new technology. A further reason, even though not directly mentioned by the tanners, could be their pride and importance connected to their identity as “traditional” leather craftsmen and the desire to preserve it. A switch in technologies might be seen as a break with their ancestral methods or an undermining of its cultural value. As is often the case, the reasons mentioned probably interact and influence with each other in combination. By consequence the tanners often prefer to stick with their established leather crafting practices rather than switching to other technologies.



Fig. 32: a) A m'ellem and his co-worker putting out a cattle skin with the *l-khtaff* after the third liming bath; b) The *s'kkim* method carried out by a *ṣān'* (Photos: V. Immervoll, Marrakech, February 2024)

Bating

Bating as the next stage of the CO serves the decalcification of these skins by using pigeon droppings (*bzāq*), in which enzymes and putrefactive bacteria remove or “digest” proteins from the fiber structure of the skin. In general, bating (CO-No. 4) makes skins softer, silkier and stretchier and the grain side gets more flat, smooth and flexible. Moreover, the bating helps to lighten the turquoise-greyish color of the skins after liming. Another effect of the bating step is a first deliming process, later to be continued in the bran drenching phase (Sharphouse 1983, 131). From this stage on until post-processing, tanners only wear their hip waders but no rubber gloves anymore. The tanners explained to me that the bating step is a very sensitive one. If the skins remain in the solution for too long, they could get holes and be completely ruined. The elaborate liming process beforehand would be for nothing, not to mention the economic damage for the tanner. It is therefore very important that the tanner inspects the skins regularly. Based on the color, thickness and consistency, he can tell whether the skins are ready for the next step. For preparing the bating bath for goat skins some water is poured into the barrel containing dried pigeon droppings to soften it, so the contents can later be poured into the *meyjar* (see Fig. 33, a). Some additional water – this time from the spring connected to the wells at *dār dbāgh* – is

added via hose into the rectangular vat. The reason why the source of water changed is because some of the water taps in the tannery are connected with the municipal water system and some with the well of the tannery. The tanner, sometimes assisted by a colleague, now empties the pigeon droppings into the vat. The solution in the *meyjar* is thoroughly mixed using the feet, and bird feathers or small twigs are picked out by hand. Then more water is added until the vat is roughly half full. Meanwhile one of the tanners turns the goat skins inside out, i.e. with the grain side on the outside. Afterwards one tanner hands the skins, one by one, to his colleague standing in the vat, who counts them aloud to have an overview of the amount. Once all skins are in the vat, the tanner mixes them by hand and foot. The goat skins remain in the bating bath for 1–2 days in summer and 2–3 days in winter before being moved to a water-filled vat for washing (*darīja*: *ashlell/tashelhit*: *ishellil*). In the meantime, the skins are moved by hand inside the *meyjar* once per day. A bating bath should maintain a relatively warm temperature, so its surface is covered with mats or textile rags. Afterwards, the skins are washed by a tanner in a high-above basin, where he pulls them through clear water by hand and leaves them soaking for one or two hours. The used bating solution is reused for sheep skins, scooped by bucket from one rectangular vat into another, where it is diluted again with clear water. The reuse of the bating solution may be related to the fact that tanners only receive deliveries of pigeon droppings at very irregular intervals. The remaining procedure and duration in the *meyjar* are the same as for goat skins, before they are likewise washed in the high-above basin with clear water. Afterwards the workspace is cleaned again and the vats are rinsed with water. Compared to the information in Jemma's ethnography, one immediate change becomes apparent: bating for goat and sheep skins was carried out in a round vat (*qşrīa*). Before goat skins were placed into the round vat, they were – just as today – turned so that the grain side faced outward. Once in the *qşrīa*, the skins were mixed by foot and remained in the solution for up to 24 hours. Jemma also notes that bating is a very delicate step, and that the tanners told her that bacteria can eventually eat holes into the skins. After bating, goat skins are turned again so that the flesh side faces outward and are washed in that position. Sheep skins are placed into a bating bath that has already been used for goat skins. At this point, no further information is provided on this step by the ethnologist (Jemma 1971, 38). The bating process for cattle skins is somewhat more elaborate than for goat or sheep skins. Around 50 cattle skins go first through a bating bath with a freshly pre-

pared solution, followed by a second bath using an old solution that has already been used once. The preparation of the new solution is the same as for goat skins. The bating is also carried out in a rectangular vat here. The skins are stacked with the flesh side facing up at the ground in front of the *meyjar*, then pulled into the vat by two tanners using *khtaf*. This task is usually carried out by two *m'tellem*, or by a *m'ellem* working with a *m'tellem*. Both tanners hook into the corners on the top of the skin and pull it together into the vat, walking to the opposite end of the *meyjar* without releasing the skin. From there, they drag the skin by the same end across the vat so that, in the end, the skins are stacked one by one in the vat, turned around with the grain side facing up. In summer, the skins remain in the bating bath for 1–2 days, and in winter for 2–3 days, before being removed – again using hooks – and placed into the second bating bath. The duration in the second bating bath is the same as in the first. In both bating baths, mats or old rags are placed on the surface of the solution. Sometimes the solution overflows, so the vat needs to be bordered with rags to prevent contamination with other liquids or ingredients. At least once a day, the tanners give the skins another foot massage in the *meyjar*. At the end of the process, the cattle skins are removed outside and rinsed with a water hose next to the *meyjar*, before being placed along the rim of the high-above basin for the next step. In relation to the bating step of cattle skins, Jemma only informs us that the cattle skins, as well as camel skins, went through this step (Jemma 1971, 50). Regarding camel skins, the older tanners told me that this step in leather production was omitted. Camel leather was primarily used for making shoe soles and saddles, so the leather needed to possess a certain level of hardness. If the camel skins had gone through bating, the finished leather would have been too soft. This example clearly shows that tanners have an understanding and awareness of how the finished leather will be further processed by other craftsman into specific leather goods. Accordingly, they must ensure that the leather they produce has the necessary qualities to be resold for further use.



Fig. 33: a) Preparation of a bating solution by pouring pigeon droppings mixed with water into a rectangular vat; b) foot massage for sheep skins carried out by two apprentices (Photos: V. Immervoll, Marrakech, February 2024)

Salt Bath

The salt bath (CO-No. 5) with acid is an intermediate stage in leather crafting that was not yet practiced during Jemma's time. It is carried out for all three types of skins to neutralize the basic ammonia produced by bacteria contained in the pigeon droppings (Sharphouse 1983, 133). For this, a high-above basin is filled with water, then salt and acid are added before the skins are placed in the basin. The acid is sold in specialized *hwanet*, filled into reused 3–5 liter hard plastic bottles (see Fig. 34, b). The amount of acid is only known for cattle skins, for which 100 ml acid is needed per six pieces of cattle skins. The skins are placed on the basin's rim until the salt bath is ready to take them in, what is often carried out by a *m'tellem*. Both, *m'ellem* and *m'tellem* have been observed to prepare this salt/acid solution. As both ingredients can cause severe damage to the tanner's skin, they wear again rubber gloves and a hip wader for protection. Both work garments are washed with clear water after finishing this work phase. Compared to all other steps, the skins remain in this bath for a very short time – just 2–3 hours – before undergoing the next step: bran drenching. Bran drenching has a similar effect to the salt bath. The tanners know that the salt bath, like the bran drenching, has the same effect on skins. So far, it was not possible to clearly determine why this procedure is performed. Also in the training course book

for tanners nothing is mentioned regarding a salt bath (see al-Wakili et al. 2023c). According to J. H. Sharphouse this stage is referred to as pickling, which is more connected to chrome tanning than to vegetable tannage. Nevertheless, he mentions that; “[...] where a full pickle has been given, the skins may be stored or kept in this state for some time before the next process [...] as full pickling stops any danger of bacterial putrefaction [...]” (Sharphouse 1983, 138). For leather crafting at *dār dbāgh*, this is not the reason why the skins undergo a salt bath as they are immediately further processed after washing them with clear water. Another possible cause could be related to the tightness of the skin, especially the grain side. In the section describing the postprocessing practices (see page 135) it becomes clear that certain operations, as for example stretching, are not carried out anymore to soften skins. Pickling can help to tighten the grain and make the leather more supple and smooth, especially when transitioning between wet work and final finishing. Since this stage was not yet in practice during Jemma's time, it may reflect a locally adapted technique influenced by knowledge in relation to chrome tanning which is carried out in some other tanneries in the quarter.



Fig. 34: a) An apprentice is giving salt into the high-above basin for the salt bath; b) The orange plastic bottle contains the acid for the salt bath (Photos: V. Immervoll, Marrakech, February 2024)

Bran Drenching

The next CO stage involves a two-step soaking process with wheat bran, commonly referred to by tanners as *nokhāla*, which designates this specific stage in leather production. Following the salt bath, all three types of skins undergo bran drenching (CO-No. 6). This step again serves to delime the skins, soften them, and impart a silky, shiny sheen – something the tanners jokingly refer to as “make-up” in our conversation. Bran produces organic acids that neutralize residual lime in the skin fibres, thereby opening them up to absorb tanning agents (Sharphouse 1983, 135–36). Let us begin again with goat and sheep skins, which are placed into a rectangular vat filled with a reused bran solution called *bashka* for bran drenching. After the salt bath, goat and sheep skins are rinsed with clear water and placed in the *bashka*, where they remain for approx. two days. Once daily, a *m’tellem* stirs the skins to ensure the wheat bran reaches every part of the skin. During this stage no *tnaffas* is performed – neither for goat/sheep skins nor for cattle. Maintaining a high solution temperature is essential throughout bran drenching, as it initiates or accelerates the fermentation process. The desired temperature is also maintained by covering the vat with mats, old rags or blankets. Unlike in bating, the mats are placed over the vat rather than directly on the solution's surface and are weighted down with wood or large stones to keep them in place. The progress of fermentation is easy to observe: bubbles increasingly form on the surface, allowing a *m’ellem* to gauge the stage of the process. A distinct odor also develops, serving as an additional indicator of the skin's state. Furthermore, the longer the skins remain in the bran baths, the more they begin to float. After remaining in the *bashka* for up to two days, the skins are removed and rinsed again with clear water in the high-above basin. While the skins soak, the *m’ellem* prepares a fresh bran bath, also called *nokhāla* – the name applied to the entire stage. The tanner begins by pouring water into the vat and taking a small handful of wheat bran to inspect it closely. The quality of the bran determines both the quantity required for the mixture and the amount of salt to be added to the new bath. To evaluate the bran's quality, the tanner tastes a small amount and mixes it with water to assess its behavior. Based on this assessment, he determines how much bran and salt are needed for the bath. Although the tanners do have a mathematical understanding, little is calculated or weighed here: the *m’ellem* relies on his sense based on experience – a form of tacit knowledge. Before the wheat bran goes

into the vat, some water is let in; then an initial portion of bran is poured in, followed by salt, and the mixture is worked through with the feet. Next, the *m'ellem* tastes the solution again to find out whether more salt may be needed. Then the remaining required bran is poured in and the *meyjar* is filled with clear water until it is half full. The washed skins are then placed into the *nokhāla*, where they remain in this bran bath for up to ten days. The duration of this step shortens in summer or whenever outside temperatures are high, because heat favors the fermentation process. In between, the skins and the solution are moved and stirred again by the tanners – most often by the *m'tellem*. At the end, the goat/sheep skins are put again in clear water to clean them. A *m'tellem* cleans the *meyjar* from the second bran bath: the old solution is scooped with a bucket into the surface sewer, the walls are sprayed with a hose, and the dirty water is bailed out. The new bran bath prepared for this step stays covered until it is used again. When it comes to bran drenching, Jemma describes two different procedures in her ethnography, depending on whether goat or sheep skins are being processed. One similarity is that both types of skins were placed into a *qṣṛā* for bran drenching, rather than into a *meyjar* as is done today. Goat skins were placed into a fresh bran bath, prepared from new bran, salt, and water. They remained in the solution for 24 to 36 hours – significantly shorter than goat skins remain in the solution today. One possible reason for this difference is that the price of wheat bran in Morocco is currently very high, so less of it is used. To achieve the same end result of this stage, tanners may leave the skins longer in a solution with less wheat bran. Jemma does not describe whether or how the skins were moved during this stage. She only notes that after some time in the solution, the skins begin to float and rise to the surface – an effect also known from today's bran drenching. Let us now turn to the descriptions regarding sheep skins. While today goat and sheep skins undergo the same bran baths, in the 1960s, there was a difference depending on which tanning agent the tanners used afterward. Sheep skins tanned with the tamarisk gall *takkut*, did not receive a bran bath. In (pre-)protectorate times, sheep skins underwent a different stage in form of a bath consisting of fig paste and water before they got tanned with *takkut*. Jemma does not mention this fig paste bath, but it is mentioned in some of the historic literature, which is described in more detail in the next section addressing tanning. Sheep skins tanned with *mimosa* – called red sheep

skins (*le-bṭāna*⁷⁴ *ḥamrā*) by Jemma – were placed into the *besḥka*, the bran solution already used for goat skins, but not into a new bran bath (Jemma 1971, 38–39).

Let us briefly address the current procedure for bran drenching cattle skins, which follow the same process using a *besḥka* followed by a *nokhāla*. The duration in both baths and the preparation of the new wheat bran bath are the same as with goat and sheep skins. The only difference is that cattle skins are placed into a round vat for bran drenching and are rinsed with a water hose on a hard surface beside the *qṣrīa*. In the *qṣrīa*, the skins are moved during the process by a tanner who flips them transversely from one side to the other – an action that requires significant physical strength (see Fig. 35, b). Unfortunately, Jemma’s ethnography does not contain detailed information regarding the bran drenching of cattle or camel skins, just that they underwent the bran drenching stage (Jemma 1971, 50).



Fig. 35: a) Sample of the wheat bran used for bran drenching; b) A co-worker flips a cattle skin upside down inside a rectangular vat (Photos: V. Immervoll, Marrakech, March 2024)

Tanning

Before describing the current tanning process (CO-No. 7) – which consists of two steps – and comparing it with Jemma’s accounts, I would like to return briefly to the fig paste bath mentioned in the section above in connection with crafting sheep leather. During the research for this master thesis, I came across references in historical sources referring to this intermediate step, which in all likelihood was already

⁷⁴ The term “*bṭāna*” refers as well to the whole skin after skinning.

practiced in pre-protectorate times. In his description of the leather craft in Tétouan, A. Joly mentions this intermediate step – named after the fig paste *tahlaoul* – which took place between the *nokhāla* and the tanning stage of *takkut*. The paste consisted of high-quality dried white figs⁷⁵ (*karmus*), which were crushed and worked into a paste by treading. During the sheep skins soaked in the fig paste bath, they were then sprinkled with salt (Joly 1906, 213–14). L. Brunot also briefly mentions the fig paste bath in relation to the production of sheepskin in Rabat, noting that this step served for deliming, but was rarely practiced anymore. He attributes the disappearance of this step to the high cost of good-quality figs (Brunot 1923, 88). In his publication C. Ziegler offers deeper insight regarding the duration and specific operations during the fig paste bath:

“[...] les peaux sont immergées pendant vingt jours dans une pâte obtenue par écrasement et dissolution de figures sèches dans l’eau. Cette liqueur est par conséquent très riche en sucre. Au bout du septième jour, la souplesse étant suffisante, on procède à un salage qui doit donner au cuir une certaine fermeté, sans cependant altérer sa souplesse primitive. Ce salage, très délicat et effectué par le maître tanneur lui-même, se fait en projetant du sel marin pulvérisé sur les peaux, placées et étalées verticalement. La dose de sel, faible au début, est augmentée progressivement jusqu’au vingtième jour.” (Ziegler 1928, 92)

Just a few years later, Le Tourneau and Paye noted in their report on tanning practices in Fèz that the fig paste bath could no longer be observed there by 1935. They mention that the fig paste bath helped prevent splitting, peeling, and shrinking of the finished sheepskin leather and took place between the bran drenching and the tanning. According to Le Tourneau and Paye, its disappearance is due to very high prices and the fact that trade with Egypt had ceased a few years earlier. This suggests that trade relations with Egypt once existed for the purchase of this ingredient crucial to Moroccan leather craft in the past (Le Tourneau and Paye 1935, 189–90). At this point, it should be noted that in all the sources cited above, the fig paste bath always took place between bran drenching and tanning. This contradicts Jemma’s account, which states that sheep leather tanned with *takkut* did not go through bran drenching.

⁷⁵ Figs have played an important role in the human diet for thousands of years. The earliest evidence of their consumption has been found at pre-pottery Neolithic sites in the Jordan Valley and the Upper Euphrates. Their cultivation likely began around 9,700 BCE. In Morocco, *Ficus carica* is widespread and also native to the SWANA and Mediterranean regions (Ghazanfar and Wickison 2023, 50–53). Meanwhile, fig trees are also thriving in Central Europe, as the author can observe with her own fig tree on balcony.

As the bran drenching is also needed to open up the skin's fibres for absorbing the tanning agent, it is even less likely that sheep skins did not undergo this stage. She does not mention a fig paste bath in connection with leather production in Marrakech, but it is reasonable to assume that this stage existed in the tanneries there as well, perhaps even long before her research. A holdover for the former use of figs in crafting leather might be the fig trees (*karma*) that, according to Jemma, could be found in every tannery in Marrakech (Jemma 1971, 69). Before describing today's tanning procedure, I want to briefly discuss why *takkut* as a tanning agent has disappeared – along with the associated *funduk*, which used to be an important meeting point and social space for Marrakech's tanners in the past. As seen with the fig paste, the disappearance of an ingredient also means that the knowledge of its preparation and use gets lost over time. This master thesis has attempted to record the remaining knowledge of the older generation of tanners in relation to *takkut*. The following reasons for its disappearance remain hypothetical and have not yet been definitively verified or falsified. It is very likely that a combination of the following factors explains why *takkut* is no longer used in Morocco's leather craft. The first reason could be a reduction in tamarisk trees due to increased desertification or changes in the agricultural landscape, especially in the oasis of Tafilalet but also in other regions where *takkut* was harvested. It is also possible that changes in the agricultural landscape have eliminated the habitat of gall wasps, without the formation of *takkut* is not possible. From Jemma's ethnography we know that even in the 1960s, other tanning agents like *mimosa* were already being used, indicating a shift from "traditional" to new tanning agents. The newer tanning agents contain higher concentrations of tannins, making them more efficient and shortening the tanning process. A shorter tanning process also means less labor is needed to achieve the same result. Furthermore, the standardization of leather production by protectorate- or government-led modernization efforts in urban tanneries may have played a role. Since *takkut* was used in Marrakech to tan white goat or sheep skins that were later dyed yellow, its use may have become unnecessary. Dyeing is no longer part of leather crafting, and natural dying agents have been replaced by industrial dyes. Industrial leather dyes are powerful colorants, making it unnecessary to worry whether the base color of the leather is white or brown. As mentioned, these reasons are hypotheses and require further, in-depth research.

Let us now return to the present. As discussed in detail earlier in the subchapter on ingredients, Marrakech's leather craft uses vegetable tanning agents derived from cork oak and black wattle bark (*dbagh* and *mimosa*). In *dār dbāgh*, the tanners primarily use cork oak bark as *dbagh bldi*. The current tanning process (*dbāgh*) can be divided into a pre-tanning phase where skins undergo an old tanning bath (*afldi*) and the actual tanning with fresh tanning agents (*tagori*). The tanning ultimately renders the remaining dermis permanently resistant to putrefaction. After the skins have been delimed by bating and bran drenching, and the fibres have been opened, they are now able to absorb the tannins. The pre-tanning of goat and sheep skins is mostly carried out by a more experienced co-worker as is it is not that crucial as the *tagori* afterwards. Before the skins are given into a *qṣrīa*, the vat in which the whole tanning procedure is carried out, the co-worker needs to prepare the *afldi*. First, he takes a skin as equipment, mostly one of low quality, to put it next to the vat which serves as underground layer to put the shredded cork oak bark onto it. Standing inside the *qṣrīa*, the *m'tellem* uses a usually noodle sieve to scoop out the bark from the solution. Afterwards he fills a little bit of clear water into it before giving the goat/sheep skins into the solution. Then, a second *m'tellem* gives him skin by skin into the round vat and in between he spreads in the *dbagh bldi*. When the skins are in the vat, he moves them again, so each gets in contact with the tanning agent. The skins stay in the mixture in summer and winter between two and three days. The opening of the *qṣrīa* gets again covered with old rags or blankets to protect the skins and the procedure from sunlight which would have the effect of reducing the tannins. For breathing the skins are given out and placed on the rim to the next round vat every day. Of course, a *m'ellem* checks his skins in between to see and feels with his hands if they are ready for the *tagori*. A main indicator for stating if the skins are ready to be given out of the *afldi* is their color. Both bark types give the skins a reddish-brown color, which also is valid for cattle skins. This becomes more and more intense the longer skins stay in the tanning bath. At this point, the goat skins still have a complete tube shape and sheep skins are already opened. After the *m'ellem* decides that the skins are ready to move on, the goat skins need to be opened. These are held at both ends by two tanners, could be two *m'tellem* or a *m'ellem* with a *m'ellem*, to stretch them and open them with a *mūs*, what is called *shqān* (see Fig. 36, b). The belly side is opened extremely fast with a total of three cuts before being placed in the new mixture of water and *dbāgh*. For the new tanning bath, the *tagori*, the *m'ellem* checks

first the quality of the bark and mixes a handful with water to see how strong it is and to know how much he can add to the clear water in the *qṣṛīa*. After the *m'ellem* prepared the tanning bath and mixed it with his feed, the goat/sheep skins stay in total of approx. twelve days in summer and up to three weeks in winter. They are not washed in between the two tanning baths or during their stay in the solution. The tanners give them outside for breathing around eight times before they finish the tanning procedure.



Fig. 36: a) An experienced co-worker (on the left with the red cap) and an apprentice putting sheep skins into a round vat for pre-tanning; b) Same tanners carrying out the *shqān*, starting with the first cut along the belly (Photos: V. Immervoll, Marrakech, March 2024)

For the tanning stage Jemma differentiates between goat skins which were tanned with *takkut* and sheep skins which underwent two separate tanning procedures either with *takkut* or with *mimosa*. As already mentioned, goat skins and some of the sheep skins needed to have in the end a whiteish color for further dyeing and others a red-brownish one. Not directly mentioned in this section of her ethnography but visible on the photographs and in her CO, tanning was carried out as well in round vats (Jemma 1971, 39, 41, Appendix). Let us start with tanning goat skins. Unlike today, they never were put into a used tanning solution of *takkut* – also called *afdli* back then. Instead, they were given into a new tanning solution because the tanners said: “[...] que la peau de chèvre est suffisamment << forte >> et résistante pour subir directement l’action du tanin pur.” (Jemma 1971, 43). Even though Jemma does not

describe in the text that goat skins needed to be opened after the tanning procedure, she marked this operation in her tabular CO (see Jemma 1971, Appendix). For sheep skins of whiteish color three different tanning operations were carried out. First, sheep skins were soaked into an old tanning bath (*assrab*) which has already been used for tanning goat skins. The next bath also took place in a previous used one, named *afdlī*, but less old and a little bit more astringent compared to the first one. Between the second and the third tanning bath, called *tagorī* and consisting of fresh *takkut* and water, the tanners stretched the skins (*aftah*). After the stretching the skins were brought to another vat for draining and opening them, also referred to as *shqān*, which was back then performed by a *m'tellem* and a *m'ellem* as this operation was considered delicate, also for goat skins. During my field research, this operation was mostly carried out by two *m'tellem* of the youngest generation of tanners and never by an experienced *m'tellem* or the *m'ellem* himself in relation to goat skins. Today, the opening of sheep skins is not necessary anymore as they are already sold being opened on the *sūq jeld*. Before being exposed to the sun for drying, sheep skins got washed with clear water in a *merkel*, coated by hand with a mixture of silt and water, and folded in two. This operation was called *absat*, and today this is not practiced any more by the tanners. For obtaining a reddish sheep skin, a two-stage tanning procedure with *mimosa* was carried out. First, they were given into an old *mimosa* bath, also named *afdlī*, and afterwards into a new one, called as well *tagurī*. During the *tagurī*, the sheep skins have been opened lengthwise. How long goat/sheep skins needed to stay in the tanning solutions is not described, as well as how the tanning solutions got prepared or any motions of the tanners (Jemma 1971, 40–43).

Like goat/sheep skins today, cattle skins undergo the two-step tanning procedure as well, whereby there are slightly some differences. For making the *afdlī* ready, a *m'tellem* uses also a skin of lower quality to put the cork oak bark on it which he sieves out of the *qṣṛā*. Next, the cattle skins are brought with a wheelbarrow to the round vat by another *m'tellem* who then gives one skin to his colleague into the vat. The tanner places the cattle skin with the flesh side down and afterwards spreads a noodle sieve full of the used cork oak bark evenly with his hand onto the skin before the next one is layered above. This operation is carried out until all of the 50 skins are in the round vat. The cattle skins stay in the *afdlī* for two or three days whereby they are given out every day for approx. two hours for breathing. During breathing the skins are placed on a skin again and also in a slightly slanting position that the tan-

ning solution drops back to the *qşrīa*. For bringing the skins into the slanting position the tanners build a construction out of wooden pieces on which the skins are placed. Then the cork oak bark is again sieved out before the skins are taken back to the round vat in the same way as described. Breathing gives also here a chance for the *m'ellem* to check his skins. How much cork oak bark he gives into the *tagori* is also influenced on how intense the pre-tanning was. A *m'ellem* uses less tanning agent if the pre-tanning already had a strong effect on the skins. The tanners always insisted that they only use natural ingredients and only cork oak bark. Only after some time did they reveal a secret to me. If there are too few tannins in *dbagh bildi*, they mix a little bit of *mimosa*, the *dbagh romy*, into the tanning solution to achieve a satisfactory result. After the skins have been layered into the *tagori* they stay in the tanning solution in summer for up to two weeks and in winter up to three weeks. After the goat/sheep and cattle skins finished the tanning, they are given out of the *qşrīa* without any washing with clear water afterwards and put on a wheelbarrow to bring them to the entrance of the tannery from where they are brought to their drying place outside of the medina wall. In the past, cattle skins were tanned after the bran drenching stage with shredded black wattle bark which is more astringent. She wrote that due to the thickness of cattle skins, the tanners needed to use a stronger tanning agent (Jemma 1971, 50).



Fig. 37: Area with partly covered round vats for tanning; visible are cattle skins outside for breathing and the tanning agent which is spread layer by layer on the skins when given back to the vat (Photo: V. Immervoll, Marrakech, July 2024)

Postprocessing

A comparison between former postprocessing operations (*tlo'a*, CO-No. 8) carried out with today's operations reveal significant changes and fewer continuities as we shall see in the following paragraphs. Generally, today for all three types of leather the first operation carried out after they have been tanned is drying in the sun. For this purpose, the leather is loaded on a wheel cart and transported to the outside of the old medina to an area called *ḥarrash*⁷⁶, located in the east near the *oued Issil*. In the case of *dār dbāgh* this is done by the person who also delivers the ingredients to the tannery. Leather of all types and from all tanneries in Marrakech are brought there for drying. Due to the small size of the tanneries there is not enough space to place the leather on the ground for letting them dry. The drying space is a vast area, but every *m'ellem* knows exactly which location is assigned to which tannery. The *dbagh* and *mimosa* residues are reused again to spread them on the ground together with leather scraps deriving from the *sedriya*, a staking tool which is characteristic for the Moroccan leather craft. The tanners told me that the mix of these two ingredients foster the drying process for the leather which usually is put on the covered ground and left at the *ḥarrash* for up to two or three days, depending on weather conditions. Every day after the *m'ellem* finishes his work in the tannery he makes his way to the drying area to check his skins. At *dār dbāgh* some of the *m'ellem* share a bicycle (*pikāla*) to move there, and on the way it can be the case that the *m'ellem* stops at the mosque in the tannery quarter to perform the *ḍuhr*, the noon prayer. At the *ḥarrash*, the *m'ellem* checks how wet the skins still are and turns them to the other side. If necessary, this is repeated the following days until the leather is completely stiff and hard. Then the leather is brought back to the tannery by the wheel cart where they get staked in an especially equipped *ḥānūt*. The workshop documented during field research was used for staking cattle leather and some other workshops at *dār dbāgh* were entirely used for staking goat/sheep leather with the same tool. The workshop is on the ground floor of a *masrīyā* and has two large beams (*ikhtār*) that extend from wall to wall. Moreover, the *ḥānūt* serves as storage space of ingredients as well as for personal belongings as cigarettes, food or the tea pot essential for breaks. As it was

⁷⁶ It is rather new that the tanners use this area for drying. A photograph taken in 2008, presented in the book of M.-R. Rabaté, shows that leather was dried next to the *Bāb Dbbāgh* where today is a parking space and a cemetery (Rabaté 2012, 35).

most of the time extremely hot and sunny, we rested inside the *ḥānūt* where we drank tea together and smoked cigarettes.



Fig. 38: Drying place *ḥarrash* outside of Marrakech's medina (Photos: V. Immervoll, Marrakech, March 2024)

Those breaks have been always a good opportunity for asking the tanners specific questions relating to their craft, to ask about their families or to exchange about the results of the latest soccer matches – always a hot topic among the tanners. At the end of the workday the *ḥānūt*'s floor gets cleaned from dust and leather scraps with a brush (*shlaba*) by the co-worker who carried out the staking. Before the leather gets processed with the *sedriya*-knife, it is moistened with clear water from the hose in front of the workshop's entrance and then carried inside by the tanner. Even though all the tanners learn all steps of crafting leather, not every tanner works with the *sedriya*. Like the *ṣān*⁷⁷ who are specialized in one work step, some of the co-workers are specialized in the work with the tool. This co-worker is named *bechcher* and the verb for working with the tool is called *tebshar*. This is extremely exhausting and requires a lot of physical strength. One principle is the harder skins, the more energy is needed. Usually for goat/sheep leather less energy is needed as they are naturally softer as cattle leather. But how does the *sedriya*-knife⁷⁷ look like? The tool consists of two distinct parts (see Fig. 39. b): an upper section made of wood and a lower section comprising a metal blade which gets crafted by a smith, located next to the medina gate *Bāb Doukkala*. The wooden handle is T-shaped, with a broad, slightly

⁷⁷ It is worth mentioning that the Moroccan archaeologist A. Fili and his team recently found a *sedriya* (undated, Inv. MBY-19-223) during an excavation at the Medersa Ben Youssef (Reitmaier et al. 2024, 384).

curved crossbar that allows to push it against the upper torso, likely enabling the tanner to exert pressure. The length of the wooden handle is adapted to the tanner's body, and the knife often is taken with them at the end of the workday. Every *sedriya* is owned by the *m'ellem* or *m'tellem* who specialize in this operation. The handle tapers downward into a vertical shaft that connects seamlessly with the semicircular iron blade at the bottom. The blade is flat and rounded. The junction between the wooden shaft and the iron blade appears tightly fitted showing that the tool is designed for scraping or pressing motions. Moreover, there are two different types of blades used for this operation differentiated by their size and sharpness which can be switched. The bigger and sharper one is used for the flesh side, whereas the smaller (non-sharp) one is used for the grain side. The bigger iron blade gets sharpened either on the whetstone, also called *tahrisha*, before the tanner starts to work with it or in between after a few motions with a knife. After moistening the leather with water, the tanner places it on the beam with the side to be worked on facing up. He takes the *sedriya* and leans his upper body against it. With one hand, he grasps the tool near the point where the metal part begins, and with the other, he pulls the leather taut at the lower end. Then he scrapes the leather, working slowly from left to right and from top to bottom. Once one part is finished, he pushes the leather further and works on the remaining areas until the piece of leather is completely staked. Once, I was allowed to try the *sedriya* on a piece of less-quality cattle leather. It immediately became clear to me that the *sedriya* is influenced by gender, designed for the male upper body. It has to be pressed against the upper chest during movement in order to exert pressure. For a female body with breasts, this technique proves difficult, if not painful. The postprocessing step with the *sedriya* knife, together with the tanner's hand and upper body movements, causes a slight stretching effect on the leather. The tanners use the *sedriya* not only to stake the leather, but also to sand and trim the edges above the beam. This is important for cattle leather to remove the parts on which the holes caused by the *l-khttaf* are visible. The edges of goat/sheep leather are trimmed with a razor blade after being pinned with the *sedriya* and before delivery to the market. In the past those cutting scraps were given to the adjacent potters for their kilns or bigger pieces sold further for making shoe soles as the tanners told me (Jemma 1971, 50). Working with the *sedriya* generates a lot of dust, which settles everywhere on the ceiling and walls of the *ḥānūt*, but also on the tanners' clothing and skin. Sometimes, in addition a grinding block consisting of a rectangular wooden

block wrapped with sandpaper (*amsāh*) is used to polish the grain side of mostly goat/sheep leather, but also for cattle leather to round up the postprocessing operations. After the tanner finishes the staking, the leather is put in the sun for drying somewhere in the tannery. It remains there just for one or two hours. Afterwards it is either given into a room used to store finished leather or directly to the markets.

In the 1960s, different types of goat/sheep leather underwent different postprocessing operations. But before being postprocessed goat and sheep leather underwent a dying procedure what is not practiced anymore. After being tanned, wrung out and opened, the leather got scraped and polished (*absat*) with pottery sherds or tiles named *shekfa* to prepare the leather for dying. Afterwards, the leather is beaten by the *m'ellem* on a large flat stone (*askemd*) what is repeated ten times per piece with the aim to soften the fibres. Next the leather got coated with alum (*sheba*) named *absat*, whether if it was applied on the grain or the flesh side is not known. According to Jemma's ethnography the dying agent for Marrakech's typical yellow leather (*ziwani*) was shredded pomegranate⁷⁸ peel mixed with water and alum. Generally, the rind of the pomegranate (*qzrah*) is tanniferous and was used for crafting leather (Ghazanfar and Wickison 2023, 119). The mixture was sprinkled on the leather with a hollowed-out ox horn called *ansab*, and then left to dry. The tanners of *dār dbāgh* also told me that in the past another dying agent was saffron, which was extremely expensive but also resulted in a yellow color. The use of pomegranate for dyeing leather, as well as the European influence on dying agents in Marrakech, can be traced back to the mid-19th-century. In 1868, P. Lambert wrote: "[...] Pour la teinture, ils emploient la cochenille, le *rakaoût* et l'écorce de grenade; ils excellent surtout pour les couleurs rouge et jaune. La *fuchsine* introduite par des Français semblait devoir remplacer toutes les autres matières employées par les tannerus, mais l'usage en a été aussitôt prohibé par ordonnance du *Mohtasseb*." (Lambert 1868a, 441). Apparently, it was a thorn in the side of the chief overseer of trade and *sūqs* that the French invention of the synthetic dye fuchsine – also known as magenta – was being used in Marrakech's tanneries (see CAMEO 2022a). Let us come back to Jemma's ethnography and her descriptions of postprocessing leather, which was generally referred to as *tlo'a*, a term which the tanners still use today. After dying and drying sheep/goat

⁷⁸ Pomegranate has always been an important fruit across many different cultures where it is a symbol of fertility, prosperity, and eternal life. It is assumed that pomegranate came over Syria to North Africa, specifically to Egypt where it was used medicinally and as a dye since 1600 BCE (Ghazanfar and Wickison 2023, 113–19).

leather got coated again by hand (*asuaf*) with a mixture of oil, alum and water intended to soften the leather. Goat leather then was beaten again and subsequently, as with sheep leather, two tanners started to stretch and spread it out (*ashiah*) on ropes which were stretched between walls inside the *ḥānūt*. Next, goat/sheep leather was staked with the *sedriya* carried out in the same way as today. Where the tanners use a razer blade today, in the past the edges of the goat/sheep leather were trimmed with a knife. Graining operations differentiated between goat and sheep leather. For goat leather, graining was done with a mushroom shaped pottery (*tblā*) which had a grooved surface and was fixed on the wall in a way that the tanner had enough space to sit during work. Followed by an in between stretching (*‘afus*) where the leather got roped on the legs and fixed on the walls before being rubbed again against the *tblā*. Sheep leather was grained with a smoother made from palm fibres surrounded by a wool net (*amsāḥ*). In the end, both goat/sheep leather were stacked and between the layers a tanner drained water on it. He: “[...] retient dans sa bouche une gorges d’eau qu’il pulvérise en fines gouttelettes sur les peaux qui sont alors prêtes à être vendues.” (Jemma 1971, 46). According to Jemma, cattle leather have not undergone any postprocessing, which seems very unlikely (Jemma 1971, 43–50). The only continuity is the use of the *sedriya* as essential tool for crafting leather, at least when it comes to goat/sheep. It is likely that this operation was also carried out for cattle leather in the past. However, all the coating, stretching and graining operations vanished within the last decades.



Fig. 39: a) A co-worker is preparing the cattle skin for the *sedriya* by sprinkling water on it (Photo: V. Immervoll, Marrakech, July 2024); b) A specialized co-worker is explaining the *sedriya* to the researcher (Photo: H. Rafik, Marrakech, September 2023)

End Product Leather

Once postprocessing is complete, the leather (CO-No. 9) is ready for sale. The entire process of crafting goat and sheep leather takes approximately one to one and a half months. In contrast, producing cattle leather takes significantly longer – up to three months from the moment the skins enter the tannery until they are sold on specialized markets. Further processing steps – commonly referred to as “currying” – as well as the manufacturing of leather goods, are typically carried out by other craftspeople, such as cobblers, at least in the case of Marrakech (Salaman 1986, 293–94). There are several ways in which the final leather product, regardless of type, is distributed. One common method for locals is to go directly to the tannery to purchase leather from a *m’ellem*. The tanner presents various pieces of differing quality. If the buyer selects one or more pieces, the price is negotiated until both parties reach an agreement and seal the deal by a handshake. This direct purchase is often motivated by the desire to have specific leather items made – such as *babouche* or a handbag – by a cobbler using a particular piece of leather. Another example relates to tourism. A Moroccan friend of mine, mentioned earlier, had leather-bound menus made for the *riad* where he works. He obtained the leather directly from tanneries in Marrakech. One key reason for this direct procurement is that leather bought straight from a *m’ellem* is usually less expensive than leather sold in the market. According to the tanners at *dār dbāgh*, wholesalers from Spain and Italy have also attempted to buy finished leather directly from the tannery. Some even tried to persuade the tanners to produce leather exclusively for them. However, the tanners refused. When asked why – since such an arrangement might provide a more secure income – their answer was straightforward: they do not want the pressure of having to produce specific quantities within a set timeframe or become dependent on a single buyer. Another distribution option is through two markets located in the medina of Marrakech: *sūq b’tana* and *sūq begra*, both of which have been visited multiple times during fieldwork (see Fig. 40). At *sūq b’tana*, goat and sheep leather are sold. Before transporting the leather to market, the *m’ellem* sorts the pieces by quality and marks them with a pen while still at the tannery. According to Jemma, each tanner inherited not only vats and the *ḥānūt* upon his father's death but also a distinctive identifying mark. These marks were well known among people involved in leather craft and serve a key purpose: to prevent the mixing of finished leather among different *m’ellemen*, especially when

multiple tanners work together in one tannery. Goat leather was marked on the flesh side near the butt, while sheep leather was marked on the grain side of one leg, as was already done when they were still raw skins (Jemma 1971, 86–89). When I brought a printed version of Jemma’s ethnography to the tannery, I showed the tanners the symbols printed in the book to see if they still recognize them. To my surprise, they did – even the younger generation knew about the marks. Although it is no longer possible to trace the marks back to specific families, the tanners explained that the symbols once indicated not only the family of the *m’ellem* but also the quality of the leather, based on the tanner’s skill. They also mentioned that cattle leather used to be marked prior to tanning – something not mentioned in Jemma’s ethnography. Today, finished leather is marked on the flesh side with a number, which theoretically links the piece to a *m’ellem*, but neither tanners nor buyers can reliably identify which number belongs to whom. There is no registry or list to trace these numbers. After sorting and marking, a delivery person straps the goat and sheep leather onto the back of his moped and transports it from the tanners’ quarter to the market near the Ben Youssef Mosque. This route passes several tourist hot-spots, including the Ben Youssef Medersa (which houses the Marrakech Museum) and the Almoravid *Qubbat*. Along this path, the leather craft literally intersects with the tourist gaze. Delivery men – and their mopeds or carts loaded with either goat/sheep or cattle leather – often become impromptu photo subjects, which doesn’t always amuse them. *sūq b’tana* is located in a narrow alley within the *sūq summarine* district and operates a year-round. Tarpaulins are stretched overhead to provide shade in the summer. Buyers sit on one side, while leather is laid out in stacks on the ground opposite them. The leather is sold from the morning until the *ḍuhr* prayer. Upon arrival, the goat or sheep leather usually passes into the hands of *dellāl*, who operate at both leather markets. A *dellāl* grabs a stack and parades it up and down in front of seated buyers, loudly promoting it. Interested buyers signal the *dellāl* by waving with a hand that they want to inspect the shown leather piece by piece – checking quality, size, and any defects on the grain side. Once interest is confirmed, bargaining begins. If a price is agreed upon, the deal is sealed with a handshake, and the *dellāl* receives a commission from the *m’ellem*. The second market, *sūq bgra*, is where cattle leather is sold. It is located in the building that once housed *sūq jeld*, near the Ben Youssef Mosque and adjacent to *sūq b’tana*. This market not only serves as a sales venue but also as temporary storage – crucial for smaller tanneries that lack storage space. Due to the

size of cattle leather, delivery is done by donkey cart, again by the same delivery person who brings ingredients to *dār dbāgh*. The route to the market takes him through crowds of tourists. Upon arrival, he stacks the leather inside the building. Unlike at *sūq b'tana*, the leather selling here is managed by the *m'ellem* who works together with his preferred *dellāl* for this purpose. Different to the other market, a *m'ellem* is not absent during the selling. A *m'ellem* usually arrives at the market after first inspecting his leather at the *ḥarrash*. The market opens relatively late – around 11:00 am – and operates for just two to four hours, until the *dhuhr* call to prayer, which varies between 1:00 and 3:00 pm depending on the sun's position. Afterward, market administrators lock the building to safeguard the valuable goods. Like *sūq b'tana*, the market remains closed on Fridays. The square in front of the building is enclosed by an old wall with a large wooden gate that is also locked overnight. Buyers – sometimes assisted by *dellāla* – examine the leather from various craftsmen before making a decision. Occasionally, other craftsmen or wholesalers buy in large quantities. Prices typically range from 150 to 600 dirhams per piece, depending on quality, size, and any grain-side defects. Returning to Jemma's ethnography, she only briefly mentions the sale of finished leather. Near the *rahba qdīma* square, a small market operated daily (except on Fridays), selling all three types of leather. Sheep leather was sold in the early morning, followed by goat, and finally cattle or camel leather around noon. Unfortunately, she does not mention the name of the market or provide details about the selling process (Jemma 1971, 50–51).



Fig. 40: a) *dellāl* shows goat skins to an interested buyer on *sūq b'tana*; b) Inside of the *sūq b'gra* where cattle leather is sold and stored (Photos: V. Immervoll, Marrakech, July 2024)

Conclusion

For the present conclusion it is important to recall once more the central research question of this anthropological study which aims to answer what has continued and changed in Marrakech's leather craft since the ethnography of D. Jemma published in 1971. Her work as an ethnologist and her ethnographic research on the tanners of Marrakech were examined in the first chapter, in order to enable a comparison throughout the further course of this thesis. As has been shown by historic sources, Moroccan leather and the craft itself for centuries have been part of the country's cultural heritage, and particularly in Marrakech the craft has been closely connected with the establishment and transformations of the city since the 12th century. Leather and leather products were exported to Europe as valued and even as luxury goods from very early on, and enjoyed an excellent reputation. The first chapter of the thesis' main part focused on a comparison within the social, cultural and economic contexts among the tanners of Marrakech rather than on a strict comparison of crafting leather itself to provide insights in the current situation. The results of this comparison will now be summarized in the following section before continuing with the results in relation to crafting leather.

The hierarchical social order of the craft has endured: the hierarchical structure of master (*m'ellem*), apprentice as well as co-workers (*m'tellem*), and day laborer (*ṣāne*) persists since Jemma's research and still plays a major role in influencing crafting leather when it comes to labor division, but also for the internal social organization among the community of tanners. There are still some tanneries with a shared ownership, but it is meanwhile more common that tanneries are in the hands of individual owners or the government regardless of their ethnic identity. Professional and kinship ties remain strong, with many tanners related by tribe affiliation, and trust-based payments of *m'tellem*, as well as long-standing work partnerships, continuing to structure social relations among the tanners. Religion continues to shape rhythms of work: prayers structure the workday, while *Ramaḍān* has a strong influence on both pace and labor organization of crafting leather and influences the *m'ellem* in the decision to hire extra workers beforehand. The location of the tannery quarter itself has not changed since Jemma's ethnography, probably because it is part of the medina which is recognized as a UNESCO and ICESCO World Heritage site. Yet residential patterns of the tanners have clearly shifted. Once concentrated in and

around the tannery quarter, most tanners and their families now live outside the medina, displaced by rising rents, safety concerns, and gentrification linked to tourism. The organization of the craft in connection with government institutions has also changed, but already before Jemma's ethnography. Previously elected by the *m'ellemen*, the *amīn* since the French protectorate period continues to be appointed top-down by state institutions such as the Chamber of Crafts, generating tensions and conflicts. This change is clearly a legacy of the French protectorate period. Cooperatives and associations still exist, reflecting both internal solidarity and external recognition. The ethnic categories that once strongly structured the craft – Amazigh ("Berber") associated with cattle and camel leather, "Arabs" with goat and sheep leather – are still present among the collective memory of the older generation. Nevertheless, it does not influence leather crafting per se anymore and the community of tanners is generally more ethnically mixed. What became obvious is that the older Amazigh tanners in particular assert their identity more confidently, likely influenced by the national recognition since the 1990s. The "in-between" generation often has a mixed ethnical background as "Arab" and Amazigh but primarily they identify themselves as Moroccan, while the youngest generation does not verbally use the "Arab"/Amazigh distinction at all. Instead, they identify simply as tanners and Moroccan. Hence, since the work of Jemma tanners in Marrakech work across all leather types, independent of their self-identification as "Berber" or "Arab". Despite these shifts in (ethnic) identity, Amazigh linguistic influence remains strong: *tashelhit* persists as the technical vocabulary of the craft, used even by non-Amazigh tanners. (Tacit) knowledge and skills remains at the heart of the craft. Apprenticeships continue as the main learning path, with intergenerational transmission still central. What has changed is that apprentices today often start to learn while having an older age and may not have family backgrounds connected with the craft, unlike in the past where often the sons learned from their fathers. Apprentices gradually progress from observation to participation, learning by handling skins under the guidance of experienced tanners – a way of learning that was described by Jemma as well. The forms of knowledge transmission have diversified: state-supported training courses now supplement traditional apprenticeships, combining theoretical modules and certification with practice and the transfer of implicit knowledge. This hybrid form both tries to ensure continuity of craft practices and is a way to introduce new technologies and skills. The number of active tanneries in the eastern medina has dropped by half

since the 1960s, and the number of apprentices is currently rapidly shrinking. Both are signs of a difficult economic situation. Today the economic pressure on the tanners, especially for the *m'ellemen*, is enormous and hard to deal with. Declining profitability, the dominance of cheap synthetic imports, and the shrinking of local leather good production force many tanners to take second or third jobs. Some even completely stopped working in the craft and changed their profession, often switching to the tourism sector. Some work illegally as tourist guides, or as hotel guards, finding these more lucrative than tanning itself even though they put themselves often in a risky situation. Generally, the strong influence of tourism on the craft existed definitely not to the same extent during Jemma's research among the tanners in Marrakech as it is today in a globalized world. Tourism has reshaped the tannery quarter rather fulfilling (consumption) needs of tourists and taking away the space for craftspeople in general. For leather goods dominates a tourist-oriented production, while leather craft itself is commodified as "cultural heritage", a circumstance from which the tanners themselves do not profit. Larger tanneries with integrated shops can benefit from tourism, but small-scale tanneries lack space or resources to do the same.

Tanneries continue to function as both a production site and a lived social space where tanners of all generations meet, share meals, tea, jokes, and talk about football. What has changed is the fact that the tanneries today are completely male-dominant and the presence in the tanneries and involvement of women in leather craft vanished. In relation with the craft itself, most notable is the use and strict spatial separation of rectangular (*meyjar*) and round (*qṣṛta*) vats which remain unchanged not only since the 1960s but also since pre-protectorate times. Yet important transformations have reshaped this space since the 1960s: the modernization of the tanneries in the 2010s introduced toilets, showers, sewage connections, and a liming mill (though unused), while older structures such as the *masrīyā*, once vital for housing, storage, and the exchange of goods among tanners, have almost entirely disappeared. Practices once central to social life, such as collective smoking of *kīf* – even used as apprentice payment – are not that intensively present as a social practice among the tanners as it once was. The smoking of *kīf* and *hashish* is now rare and seen critically by the older generations. Health issues have been observed as younger tanners display chemical burns resulting from inadequate protective clothing that remains prohibitively expensive and largely unavailable. Ownership patterns of workshops and vats are still the norm, with some vats made collectively available for

co-workers to run independent production, while spatial pressures have relocated drying spaces for leather to the external *harrash*. Despite this change, the tanneries still continue as important social spaces, with tanners gathering in workshops for breaks, meals, and collective decision-making, maintaining its role as a workplace deeply embedded in social life.

Let us now summarize the results of the comparison of crafting leather. In general, since the 1960s all three leather types continue to follow the same vegetable tanning procedure, with the notable exception of the newly introduced salt bath, while the production of camel leather has disappeared entirely from Marrakech's tanneries since the 1960s. These observations make obvious that changes and continuities are located less in the overall framework than in the operations and steps of individual production stages, which is why a closer examination of each stage becomes crucial for the following conclusion. In relation to (un-)conscious technological choices, it becomes clear that individual agency plays a more decisive role in leather crafting than collective agency in comparison with the information given by Jemma. Nevertheless, collective needs and decisions are still taken into consideration and can exert a significant influence on individual choices, even though their overall importance has gradually declined.

The first CO-step thematized the origins, preparation and selling of raw skins and further ingredients used in leather craft. The *sūq jeld* remains the central marketplace for raw skins in Marrakech where goat, sheep, and cattle skins are the main skin types traded. Pastoral practices such as transhumance persist in the Moroccan agropastoral landscape, even though major transformation in form of sedentarization, land privatization, and political-economic reforms occurred since the French protectorate period and continued decades after. The raw skins once sourced locally are now increasingly originate from living animals imported from Brazil, the EU, and Australia showing the influence of an international market economy. Skinning quality has fallen as the importance of skilled butchers gave way to machines or untrained workers in slaughterhouses. Basic curing methods – salting, sometimes with animal feces, and drying – endure even though these methods are more simplified in comparison with Jemma's information. Goat skins are still sold in tube shape and sheep as well as cattle are sold open along the ventral side. The specialized *l-bat* profession has vanished, and overall cultural awareness of leather's value has diminished as it became more common that raw skins got simply thrown away by the Moroccan popula-

tion after *īd al-Adḥā*. At the raw skin market auctioneers (*dellāla*) continue to mediate sales, but their importance has declined, as trust in their valuations eroded and barter with other goods as payment method disappeared. Tanners still rely on hand-checking skins to assess quality based on environment, age, and diet. Cooperatives that once organized the purchase of raw skins have lost relevance. Instead, the individual *m'ellemin* are responsible for their acquisition. Economically, unsold skins now accumulate, reflecting industry decline, and whereas Morocco once exported large quantities of salted and dried skins to Europe in pre-protectorate times, it now relies increasingly on imports to meet domestic demand. Jemma's ethnography gives little detail on ingredients, but historical, archaeological, and deeper research reveal clear continuities as well as changes.

Many traditional ingredients remain central, such as water, salt, quicklime, pigeon droppings, wheat bran, and cork oak and black wattle bark, often acquired collectively through cooperatives relying on tribal networks that still structure access to local resources. At the same time, significant shifts have occurred: water now comes from costly municipal and well systems rather than from the river *oued Issil* or *khetaras*, sodium and ammonium sulfide are imported and widely used as chemical substitutes. Wheat bran is industrially processed and imported, and the once extremely important local tanning agent *takkut* what was already in use during pre-protectorate times has vanished completely but is still remembered in the collective memory of the older generation of tanners. While cork oak and black wallet bark as tanning agents persist since the 1960s. But the locally harvested cork oak bark is less and less affordable due to shrinking availability and high prices caused by forest degradation influenced by factors such as climate change, desertification and urbanization. It is increasingly replaced by imported and cheaper *mimosa* containing also a higher amount of tannins. Washing and soaking remain the first step practiced inside the tannery, carried out in the collectively shared *merkel* with shared equipment and fixed numbers of skins per basin, guided by technical know-how on timing, temperature, and water quality. The amount of processed goat/sheep skins has expanded, per basin doubling or tripling but the amount of processed cattle skins stayed the same since the 1960s. Protective work garment are in use as the awareness for protection during work among the tanners increased, even though new work clothes are often unaffordable for them. By-products have also shifted in use, as cattle tails once resold for fly whisks are now discarded and thrown away.

Across liming, dehairing, and fleshing, core practices remain recognizable, but major adjustments have reshaped effecting the length of this stage. Liming still relies on the use of quicklime, careful temperature control and is carried out in rectangular vats, with skins massaged and taken out to “breathe”, while dehairing and fleshing continue as essential operations that prepare skins for further stages in crafting leather. Yet since the 1960s, sodium sulfide has replaced older additives as ash, extremely shortening liming and easing dehairing and fleshing, while older methods such as the *ifred* for goat/sheep skins and wringing/stretching afterwards have disappeared as was already the case during Jemma’s research. It should still be considered as a pre-protectorate operation. Moreover, paint unhairing of goat/sheep skins is a practice that is more and more relevant. Tools have shifted too for this work stage: the *hadida* scraper is gone, replaced by hand-stripping or the *assawa hafia* and *meydia* which is actually one tool for dehairing and fleshing cattle skins. The use of the tanner’s beam by specialized day laborers as example for a still existing work migration within Moroccan leather craft could be observed and remained as technique since pre-protectorate times. Collectively shared wheelbarrows and squeegees modernized the workflow and cleaning practices of workplaces. By-products once repurposed, like cattle tails or goat hair – prepared and sold by tanners’ wives – are now largely discarded or traded through middlemen. Attempts at mechanization and a change in technologies, such as the rotating liming drum, remain stalled due to water scarcity, electricity costs, and the cultural pride of preserving traditional identity as craftsmen. Overall, continuity lies in embodied skills and collective infrastructure, while changes stem from chemical innovation, economic pressures, and resource scarcity.

Bating remains a delicate but essential step, ensuring skins are softened, smoothed, and prepared after liming. Core practices – like foot-mixing, massaging, temperature control with mats, reusing goat baths for sheep skins, and judging readiness by look and feel – persist. Infrastructure has shifted from round basins to rectangular vats, protective gear is partly adopted and the duration of soaking lasts longer.

Bran drenching continues to serve its core role of deliming, softening, and preparing skins for tanning, with fermentation controlled through heat-retaining covers, reused solutions for sheep after goat skins, reliance on tacit knowledge for mixing the bran solution. Cattle skins also still undergo this stage. However, the practice has shifted from round basins to rectangular vats for goat and sheep skins, while cattle retain round vats. Durations have lengthened significantly – from about 24–36 hours in the

1960s to up to 10 days today – partly because less wheat bran is used due to high costs deriving from resources shortages based mainly on climate change. Daily stirring, systematic vat cleaning, and physically flipping cattle skins still remain as core practices for this work stage. Sheep skins, once treated differently depending on tanning agents like *takkut*, are now processed the same way as goat skins. In pre-protectorate times it was common to put the skins as well in a fig bath before tanning them, a stage that had already vanished during Jemma's research and information could be found only in historic literature.

The tanning stage shows strong continuities in its overall structure, with a two-step process in round vats, daily "breathing" of skins, reliance on natural tanning agents like cork oak bark, and the *m'ellem*'s tactile and visual checks to monitor the progress on the skins. At the same time, significant changes have occurred: older practices such as the use of *takkut*, the *absat* coating, and separate procedures for sheep skins have disappeared; goat and sheep skins now follow nearly identical operations. Delicate tasks once reserved for masters are today often done by apprentices, and cork oak bark is sometimes discreetly mixed with mimosa to strengthen the tanning results. An operation that is still carried out today – not only by *m'ellemen* but also by his *m'tellem* – is the opening of goat skins with a knife. In sum, while the core operations of tanning remain the same, ingredients, techniques, and divisions of labor have changed.

In postprocessing, the main continuity is the use of the *sedriya*-knife, still essential for staking and finishing leather of all three types. Most other earlier practices have disappeared: traditional dyeing with pomegranate peel or saffron, coating with alum and oil, beating on stones, stretching on ropes, and graining with pottery or palm-fiber tools are no longer carried out. Drying is now centralized at the *harrash* outside the medina, trimming is done with razor blades for goat/sheep skins instead of knives, and leather scraps are discarded rather than reused. Only the *sedriya* and its staking motions remain as a clear continuity, while nearly all older coating, dyeing, and graining operations have vanished. Even though a direct comparison due to a lack of information in Jemma's ethnography is hard to make, it seems that the production time for all three types of leather has probably shortened over the last decades by using chemicals as sodium sulfide and not practicing certain operations anymore. The main reason lies in the increase of economic pressure in a surplus economy but also in the decrease of available work force as less craftsmen work in the tanneries.

The distribution of the end product leather has different forms ranging from a direct purchase from the tanners to specialized markets. In comparison with Jemma's ethnography continuities could not be identified instead significant changes occurred including the disappearance of the old market near *rahba qdima* square and the new existence of two specialized markets, the replacement of family-specific symbols marking finished leather is now done with anonymous numbering and attempts by European wholesalers to secure exclusive supply, the use of mopeds for transporting finished goat/sheep leather from the tannery quarter to the markets, and the use of them as storage due to limited space in the tanneries.

Allover, the anthropological study clearly demonstrates that Marrakech's leather craft is shaped by a constant tension between historical tradition and contemporary modernity. Both continuities and changes root in influences of globalization, environment, social structure and organization economy, (tacit) knowledge and skills, religion, the political system, (ethnic) identity, the legacy of colonialism as well as place/space. By documenting and analyzing continuities and changes across the social, cultural and economic context of the tanners as well as in each stage of the *chaîne opératoire* this thesis demonstrates that the leather craft is not static but constantly in change, not only since the 1960s but also before Jemma's research. Marrakech's tanners thus embody what it means to live and work between tradition and modernity. Finally, building on the findings of this thesis, several future research perspectives emerge that could further illuminate the entanglements of tradition, modernity, and broader socio-historical dynamics in Moroccan leather craft. First, the enduring influences of colonialism on tanning practices, institutional structures, and material choices deserve closer examination, particularly regarding how the former French protectorate period shapes the craft today. Second, the growing role and influence of tourism in transforming the leather craft calls for ethnographic studies on, for instance, how heritage is commodified and reinterpreted in global markets. Third, historic and ongoing patterns of work migration among Moroccan craftsmen could be explored comparatively, situating tanners within broader circuits of mobility and labor exchange across regions. Finally, the historic connections between tanners and other crafts, especially potters invite further interdisciplinary investigation into the interdependence of craft communities in Morocco.

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Appendix A

Parts of Interview Transcript with D. Jemma-Gouzon (2024/03/12)

Duration of whole interview: 01:35:59

Participants:

J-G = Jemma-Gouzon

VI = Victoria Immervoll

Part I

00:33:36

J-G: And Madinah, it was it is for me the most beautiful full cities that I have known in this world. Uh, not, uh, because of the architecture or things like that, but because of the light, spiritual light, which is all around because of, uh, the presence. Very soft and, uh, lovely presence of, uh, the prophet. And then after that, then we had to leave. Then we came back to France and to leave Madinah. As for my husband, as for me differently, as it broke our hearts this time. And when I came back to France after very few months. I have to work out how physically and spiritually I have to go through a surgery or cut open heart, as I say, uh, and then uh, and then, uh, from that, my husband and I very much problem of uh, uh, breath problem. Yeah. Mhm. Mhm. And that and that and then, and then I came back in uh, in Morocco in uh, 2012. And at which time my, uh, mon cher, my first cher has died four years for, for five, six years. Then I enter another, uh, tariqa. What do you call Sufi tariqa? Here in Morocco there is many Sufi tariqa. Also. And there is di peu, very close from uh, in some aspect, uh, Karachi and Marrakech. And sometimes I mix elapses, I want to say Marrakech and say garage. And as, uh, there are some similaritiés in donque then I am here. Alhamdulillah, Alhamdulillah. And I am walking now. No, not walking, but I am involved in, uh, some, uh, with an association. Very nice association for the safety. I don't know how to say in English, but, uh uh, see, Ahmed Skounti, uh, he is in the same association.

00:36:52

VI: The, the We Speak Citizen. I've heard of them!

00:36:54

J-G: Oui!

Part II

00:43:26

J-G: I will say, you understand, my husband always was laughing about my, my interest for all that. Well, You. It wasn't just. It was a understanding. Very well. But it was nothing. Okay. And now. But he passed away two years ago. Uh, after, uh, because of his disease of, uh. And because of the coronavirus, the Covid also. Also, I got the Covid two years ago with him. But Alhamdulillah, I get through, I got through. And now again, I am okay. Inshallah. We'll see what happens. Everything is in the hand of God. Then we have not to worry. And he is doing always the best for every one of us, inshallah. Even through tests, they run through difficult difficulties to test. But I'm doing it. Voila, voila. I don't know if, uh, if you have question and I can answer it. It would be my pleasure.

00:44:43

VI: Of course I have questions. Uh, what would be also interesting for me to hear is, how did you come to ethnology?

00:44:57

J-G: Uh, how I came to ethnology. This, this is a yes. It is a question for me. It is important because actually. Actually, I told you I was born in, uh, Algeria. Mhm. And, uh, when I was 11 years old, I was born in Algeria in the context of the colonization. Mhm. And uh, I was on, on the, in the, I was born in the colonial population about, dans le contexte colonial. You understand?

00:45:39

VI: Of course. Yeah.

00:45:40

J-G: Of course. Uh, I was 11 years old. Years when started, uh, the war for liberation of Algeria. And when I left, I left Algeria. Uh, my parents were leaving, uh, for me, it was the time of my, uh, in, uh, studies in, uh, university. Uh, I was 18, uh, we left Algeria at this time. It was in, uh, 1971, 66 was 61, 61, soixante-et-un, yeah 61. Uh, I was, Uh. Uh, actually, uh, no, I can go back a little bit. I was thinking to become, uh, I wanted to become an ethnologue from the age of 15 years. I wanted to become a, uh, at this time, it was. I was not really at full consciousness why I wanted that, but I felt from my deep heart. And I was reading books about anthropology and, uh. Um, but, uh, I could not, uh, realize that it was a full war. When I left,

then I was 18. At the time I left, I realized that I was born there. My father, my mother, my grandparents were born there. And I realized that I did not know. I didn't know nothing about the population, the true population of Algeria. I knew nothing. Of course, by the population, French people or that were just considering the indigene. As you said, the indigene population just has nothing and no interest. But then I realized that I knew nothing. I had just understood nothing. I understood nothing. Then, and it was for me something very important. Then, just before leaving, I, uh, I went to the city Constantine, where my grandparents were living. And there we had to tell them, uh, goodbye. And after they came on shore to France. Then I make I make for myself the the sermon, you understand, to come back for understanding. For understanding. I wanted to understand. I did not understand nothing during all that I. What I can see is that my parents didn't understand. My grandparents didn't understand. We are just. We just, uh, two populations with no understanding. Nothing. I just wanted to understand it. And then it is like that. And, uh, so as soon as, uh, I was the same year, I, uh, first time in the first year of, uh, in the université générale, and after I entered for, for making my license on sociology. Spécialization ethnology already. Already. And then. Uh, then it was, uh, we, uh, in soixante-quatre, it was my, my last year of, uh, license. I saw in the university that they were doing some, uh, lessons to teach Arabic language, uh.

Part I - Tanning of finely crafted goat leather (=Maroquin)

see Jemma (1971, Appendix)

stage	step	operation	place	products	tools and gestures	work carried out, results obtained
greening (<i>ifferd</i> [sic])		soaking of skins	waterhole/pond (<i>ifferd</i>)	purified water + pigeon droppings		greening - skin is free of impurities
		drying	embankments			
		removal of hair (<i>aql'a</i> or <i>yatselt</i>)	workshop or yard		beam and peeler (<i>yatselt</i>)	
-	transition	washing (<i>ashtell</i>)	round pit (<i>qasriya</i>) or large basin (<i>merkel</i>)	clear water		1st preparation for tanning
liming (<i>l-mejjer</i>)				slaked lime		these operations, known as liming or pelanage, enable the complete removal of substances still adhering to the skins
	<i>lakhdar</i>		excavated rectangular vats in white lime-impregnated soil	used lime		
	pelain gris - 1st dehairing (<i>amharrash</i>)			lime (two baths)	iron peeler and knife	
	fleshing, trimming			lime (one bath)		
	pelain vif (<i>l'qat'a</i>)			quick lime		

transition phase (<i>assawa</i>)	washing (<i>ashlell</i>)	1. washing (<i>ashlell</i>) 2. treading** (<i>merkel</i>)	large circular basin (<i>merkel</i>)	clear water		work intended to remove lime residues
	2nd dehairing or trimming, fleshing	removal of appendages (e.g. tail)	basin rim or vats ledge		knife (<i>muss</i>) scraper (<i>hadida</i>)	removal of fat and muscle tissue
bating - pigeon droppings bath (<i>bzerq</i>)			round vats (<i>qasriya</i>)	water + unused pigeon droppings mixture	before giving into mixture, the skins are turned inside out, with grain side up, and stoired	the bating produces very fine-grained supple leathers. The skins become softer and thinner. This is the deliming process
	branching - wheat bran bath (<i>nokhala</i>)		round vats (<i>qasriya</i>)	water + salt + preserved wheat bran	the skins are turned over again	Deliming operation. The effect is to remove all traces of lime and pigeon droppings. The skins becomes thicker, clean and firm
tanning (<i>debbagh</i>)	tan (<i>debbagh</i>)		round vats (<i>qasriya</i>)	water + not used tannin (<i>debbagh- jdidd</i>)	the skins are returned to the mixture 2 times after being turned and drained	pre-tanning

	(<i>takkut</i>)	<i>afedli</i> skins directly soaked in a bath of recent astringend <i>takkut</i>	round vats (<i>qasriya</i>)	water + astringent tannin (<i>takkut</i>)		
	opening of goat/sheep skins (<i>shukkan</i>)				knife (<i>muss</i>)	
	scraping (<i>ashkaf</i>)		small round vats (<i>azgi</i>)		pottery jar (<i>shekfa</i>)	preparing the skins to receive dye
	threshing (<i>askemd</i>)		on a large flat stone (<i>askemd</i>)			step to soften and stretch fibres
	polishing (<i>absat</i>)		on the ground	alum (<i>shebba</i>), water (<i>elma</i>), huile (<i>ez-zit</i>)	skins are coated by hand	step to oil and make skin shinny
	dyeing (<i>sebhga</i>)		in the shade of pomegranate tree on workshop terraces or city wall	alum + water + grinded pomegranate peel (<i>legish</i>)	dyeing is done by hand, but poured with a hollowed-out cow horn	
	drying (<i>anshar</i>)		bosses' workshop			
	stretching (<i>aftah</i>)		on a large flat stone (<i>askemd</i>)			softening fibres
	threshing (<i>askemd</i>)					softening fibres
	stretching by hand					
	postprocessing				<i>sedyla</i> or <i>hafia</i> , hard or soft knife	softening fibres
					knife (<i>muss</i>)	to refine skin edges

	polishing (<i>amsah</i>)		bosses' workshop		
	graining (<i>aqsar</i>)			palm fiber smoothing tool	remove skin grain
	stretching ('a fus [sic])			skin is attached to ropes fixed to the workshop walls	the tanner pulls on skins to lengthen the fibres
	(re-)graining (<i>amran</i>)			mushroom-shaped pottery (<i>tabla</i>)	brings out the skin fullness (?)
	water sprinkling on stocked leather (<i>bughan</i>)				

Translated from French to English by V. Immervoll, 2023/24

darija-terms written as in CO of Jemma

* french-term which has no English ** dt. "Keltern", Treten
equivalent; basically a rectangular vat mit den Füßen

Part II - Tanning of sheep leather (=basanes)

see Jemma (1971, Appendix)

stage	step	operation	place	products	tools and gestures	work carried out, results obtained
no iferd						
-	Washing (<i>ashlell</i>)			like goat skin		
liming (<i>l-mejjyer</i>)						
transition phase (<i>assawa</i>)						
bating - pigeon droppings bath (<i>bzerq</i>)		like goat skin		water + pigeon droppings previously used for goat skin (<i>merqa</i>)		like goat skin
branching - wheat bran bath (<i>nokhala</i>)		like goat skin		water + wheat bran previously used for goat skin (<i>bashka</i>)		like goat skin
tanning (<i>debbagh</i>)	tanning step (<i>debbagh</i>)	like goat skin		water + tannin previously used to treat goat skin (<i>debbag</i> [sic] <i>qdim</i>)		like goat skin
	takkut for "white" sheep skin/mimosa f. "red" sheep skin	assrab	round vats (<i>qasriya</i>)	takkut bath for white coloured sheep skin or mimosa bath for red coloured sheep skin; used, non-astringent bath		like goat skin

			<i>afedli</i>	round vats (<i>qasriya</i>)	<i>takkut</i> bath or a little of used <i>mimosa</i>	like goat skin
			<i>afrah</i> : stretching of skins			like goat skin
			<i>taguri</i>	round vats (<i>qasriya</i>)	<i>takkut</i> bath or astringent <i>mimosa</i>	
			opening of goat/sheep skins (<i>shukkan</i>)			like goat skin
			<i>taguri</i>	round vats (<i>qasriya</i>)	new astringent baths	
pre-currying	washing + rinsing treading		<i>ashlell</i> (washing) <i>merkel</i> (treading)	large circular basin (<i>merkel</i>)	clear water	
	1st polishing (<i>absat</i>)			on the ground	mix of slag and alum	
	drying: <i>anshar</i>				like goat skin	
currying (<i>tlo'a</i>)	2nd polishing (<i>absat</i>)			on the ground	mix of water, oil, alum	like goat skin
	stretching (<i>afrah</i>), stretching by hand, buffing, polishing					like goat skin

Translated from French to English by V. Immervoll, 2023/24

darija-terms written as in CO of Jemma

Appendix B

List of Interviews⁷⁹

No.	File Name	Keywords of Content	Date of Recording (Duration)
SEPTEMBER 2023			
01	19092023_DDB_Interview D	production process (<i>bzāq</i> , <i>nokhāla</i> , <i>dbagh</i>), dying of leather	19/09/2023 (00:03:55)
02	20092023_DDB_Interview S	production process of cattle leather (<i>ashlell</i> , <i>jar</i> , <i>assawa</i> , <i>amrāsh</i> , <i>bzāq</i> , salt + acid, <i>nokhāla</i> , <i>dbagh</i>)	20/09/2023 (01:07:12)
03	1_21092023_Interview S	Production process (<i>ashlell</i> , <i>assawa</i> , <i>amrāsh</i>), earthquake, tools, payment, social organization, knowledge transmission, ownership/inheritance of vats, water prices	21/09/2023 (01:15:49)
04	2_21092023_Interview K	biography of K, production of leather goods, business nowadays, connection between tanneries and other crafts	21/09/2023 (00:16:59)
05	1_23092023_Souk Jeld (Elkhanz)_Interview skin seller	raw skins, origins of skins, prices, connection to tanners in Marrakech	23/09/2023 (00:13:22)
06	2_23092023_DDB_Interview HU_Q of Hanut	ownership of tanneries/vats, ethnical segmentation, tanneries in the past, Amazigh identity	23/09/2023 (00:23:28)

⁷⁹ The Interviews were conducted and recorded with the verbal permission of all interviewees in September 2023, February/March 2024 and July 2024 during the field research.

FEBRUARY/MARCH 2024			
07	240208_01_Rec_ H V S 240208_02_Rec_ H V S	production process (<i>jar, bzāq</i>), quality of leather, mas- sage/movements/breathing and its effects, colors of skins/liquids, criteria/tasks for checking skins during process, seasonal influences on produc- tion, “modern innovation” for liming	08/02/2024 (00:26:59/00:03:57)
08	240208_01_P_Conv S_ H V S	Tourism in tanneries/quarter, DDK, illnesses among tanners, modernization of tanneries, work conditions, government, corruption, quarter in general, associations, knowledge transmission among genera- tions	08/02/2024 (00:30:16)
09	240208_02_P_ H V S_Social Orga of Dbagh	Social hierarchy of tanners, organization of work, owner- ship of leather, knowledge transmission	08/02/2024 (00:09:31)
10	240208_03_P_ H V S_Tourism	Tourism (example “Visit in DDK with S”)	08/02/2024 (00:04:51)
11	240208_01_Rec_Explanation of Tool Terms	linguistic roots of tool terms/verbs and its connec- tions to leather production, <i>tashelhit</i> or <i>mrrakshy</i> -dialect	08/02/2024 (00:16:53)
12	240210_01_Suq Jeld	prices, impacts on global leather market, current eco- nomic situation, auctioneers (<i>dellāla</i>), payment arrange- ments between <i>m’ellem</i> and	10/02/2024 (00:17:34/00:17:57)

		skin seller	
13	240210_02_Suq Jeld	recognition of raw skin quality, procedure(s) of price negotiations, price negotiation with direct translation/explanation by H	10/02/2024 (00:17:57)
14	240212_01_Rec_DDB_Quality of raw skins_S HA H V	Quality of raw skins (goat example), 3 factors for quality, <i>dellāl</i> + quality at markets	12/02/2024 (00:18:36)
15	240212_02_Rec_DDB_Interview CO of goat and sheep_M BA H V AB	Production process of goat/sheep leather	12/02/2024 (00:57:01)
16	240213_01_Rec_M HEF V_About mill 240213_02_Rec_M HEF V_Terms related to mill	current situation in tannery DDA, biographical information, knowledge transmission, about mills, terms of mill parts	13/02/2024 (00:31:34/00:22:19)
17	240214_02_Rec_S H_About Tanning Course Book 240214_03_Rec_S H_About Tanning Course Book	Course books, interviews in <i>darīja</i> , conv between H and S	14/02/2024 (00:17:30/00:35:41)
18	240214_01_Rec_S H V_About quarter and living of Amazigh tanners	Tanner's quarter and houses (<i>masrīyā</i>), Amazigh identity, exchange of goods among tanners in past, postprocessing of leather (<i>sedriya</i> , graining, buffing)	14/02/2024 (00:12:12)
19	240215_01_Rec_S H V_About wheatmeal bath	bran drenching	15/02/2024 (00:28:30)
20	240218_01_P_S BA M Two Friends V_About Jemmas Book	Showed Jemma's Book and pictures, mills, Amazigh identity, old techniques and materials (<i>takkut</i> ,...), " <i>dqqa mrrakshya</i> "	18/02/2024 (00:28:02)

21	240221_01_Rec_Conversation with S about diff topics_V S	war Israel/Palestine in Gaza, French colonialism	21/02/2024 (00:27:00)
22	240221_02_Rec_Conversation with S about rest of Course Books_S BA V	Course books, knowledge transmission	21/02/2024 (00:11:15)
23	240226_01_Rec_About CO of Cattle Leather_S V	Production process of cattle leather	26/02/2024 (00:48:16)
24	240311_01_Rec_Walk to Drying Place with Son of HA	Amazigh identity and language, connection to Taroudant, eco- nomic situation (prices, Covid- 19,...), production process (drying,), prices/sources of materials, visit of strange tan- nery for sheep leather + wool production (?), knowledge transmission, future of craft	11/03/2024 (01:38:34)
25	240312_01_Rec_JEMMA 240312_02_Rec_JEMMA	Interview with Jemma-Gouzon (for this interview notes were written during the conversation and a memory protocol after- wards)	12/03/2024 (01:35:59/00:17:49)
JULY 2024			
26	240715_01_P_Conversation with older tanner DDK	Production process, tannery DDK, tourism	15/07/2024 (01:01:02)
27	240723_P_DDB_About Tanner- ies in Marrakech_AK AZ V	Past and present of tanneries in Marrakech, mill, names of active tanneries, Amazigh iden- tity and language,	23/07/2024 (00:42:58)

List of Vocabulary⁸⁰

TERM	MEANING
‘afus	stretching of leather
absat	operation of coating skins with a mixture of silt and water/scraping and polishing of leather
afdli	old tanning bath
agdal (tashelhit term)	high-altitude mountain pastures
Amazigh (sing.) / Imazighen (pl.)	self-designation of “Berber(s)”
amīn	“head of crafts”
amkellt	3 rd liming bath (reused)
amrāsh	dehairing of animal skin
amsāḥ	smoother made from palm fibres surrounded by a wool net; used for graining
amsīr (tashelhit term)	mill’s circular stone base
amssarab	1 st liming bath (reused)
ansab	horn of cattle used to spread dye on skins and to fix ropes on wall for stretching skins
ansalla	act of putting skins back to vat
aserdun (tashelhit term)	mule

⁸⁰ Based on fieldwork in September 2023, February/March 2024, July 2024 and the ethnography of D. Jemma (1971); revised by Sara Fatihi (Department of Near Eastern Studies, University of Vienna)

Ashelḥi (sing.) / Ishelḥin (pl.) (darīja: chleḥ (sing.)/ chluḥ (pl.))	ethnic group indigenous to the Anti-Atlas, High Atlas, Sous valley and Soussi coastal regions of Morocco; Tashelhit speakers
ashiah	stretching and spreading out skins on ropes between walls
ashlell (tashelhit: ishellil)	washing of skins
Āshūrā	the 10 th day of Muḥarram
askemd	large flat stone for beating leather
assawa	action f. making surface equal
assawa hafia	non-sharp tool for unhairing the skins
assawa madeya	sharp tool for fleshing animal skin
assrab	old tanning bath for sheep skins
atāy	tea
atrah	act of raw animal (pre-)selection based on quality on the <i>sūq jeld</i>
azerq (tashelhit term)	large mill stone
Bāb Dbbāgh	gate of tanners (Eastern city wall gate in Marrakech)
Bāb Doukkala	Northwestern city wall gate in Marrakech
Bāb El-Khemis	Northern city wall gate in Marrakech
bechcher	person who works with <i>sedriya</i>
belgha	Moroccan leather slippers (also known as <i>babouche</i>)
beskha	reused bran solution

bg̣ra (sing.) / bgari (pl.)	cow
bldi(-a) (tashelhit: abldi)	something or someone local (literally: from the <i>bilād</i> , i.e. from this country)
bṭāna	whole skin after skinning
bzāq	pigeon (droppings)
dār dbāgh	tannery
dār dbāgh kbīra	big tannery in Marrakech
darīja	Moroccan Arabic Dialect
dbagh	tanning agent (cork oak bark)
dbāgh	tanning (production step)
dbāgh (sing.)/dbbāgh (pl.)	tanner(s)
dbagh bldi	traditional tanning agent (e.g. <i>takkut</i>)
dellāl (sing.) / dellāla (pl.)	intermediary agent
derb	street
dhū al-hijjah	12 th month in the Islamic lunar calendar
djāj (tashelhit: afullus)	chicken
ḡuhr	noon prayer
dyāl	of
‘īd al-Aḡḡā (or ‘īd al-Kbīr)	Festival of Sacrifice (or “Big Holiday”)
fajr	morning prayer
fekhara	former cemetery in the tannery quarter; maybe a unique term

fransi (tashelhit: afransi)	French
funduk	market space and/or inn
gnawa	Moroccan music genre
hadida	iron tool
hafi(-a)	not sharp
Ḥajj	Islamic pilgrimage
ḥānūt (sing.) / ḥwanet (pl.) (Tashelhit: aḥanut)	(work-)shop
ḥarrash	name of drying place outside of Marrakech' medina wall
hashish	drug of cannabis plant
hayt (darīja term)	wall
ḥewli	sheep
Hijri	Islamic New Year
hmmam	steam bath or place of public bathing
ḥrīra	Moroccan lentil soup
Ida ou Zeddout	<i>Ishelḥin</i> tribe
ifred (tashelhit term)	literally: pond
iftar	meal eaten during <i>Ramaḍān</i> after sunset
ikhtār	beam used for working with <i>sedriya</i>
jar	(quick-)lime

jdīd	new
jeld (sing.)	skin
jellaba	traditional Moroccan coat
jellad	a person who is carries out skinning with a knife
jml (sing.) / jmāl	camel(s)
karma	fig tree
karmus	fig(s)
kesksu	couscous
khḍr	unprepared raw animal skins
khettara	underground water canals for irrigation
khobz	bread
kīf	drug of cannabis plant
kūra (Tashelhit: takurt)	soccer
l-‘eydia	term for sheep skin (comes from the word “Eid” for the Festival of Sacrifice – Eid Mbarak)
laḥmia	flesh side of animal skin
lakhdar	2 nd liming bath (reused)
l-bat	intermediary (person was responsible for salting raw animal skins; historic term)
l-bṭāna ḥmra	red sheep skin
lfess (Tashelhit term)	name of black wattle bark

limūn	orange(s)
l-khttaf (Tashelhit: akhtaff)	hook(s)
lli kay-sawi	person who equals the skin
l-ma (Tashelhit: amaan)	water
l-mejl (Tashelhit: talmerjelt)	mill's mobile horizontal axis to which the mule is fixed
l-qat'a	4 th liming bath (new quicklime solution)
lūbiya	white beans stew
lused	ropes
m'ellem (sing.) / m'ellemin (pl.)	master(s) of craft
m'ellem dyāl jeld	master of skin
m'tellem	apprentice or co-worker
Maamora	forest between Rabat and Meknes
madeya	sharp
maqādir	ingredient(s)
masjid	mosque
masrīyā	accommodation of tanners inside the tanneries
mdina	old downtown
me'za	goat

me'zi	adjective for anything related to goat
melḥa (Tashelhit: tisnt)	salt
merkel	high-above basin for washing animal skins
meyjar	rectangular vat
meyjar jdīd	new liming bath
meyjar qdīm	old liming bath
mimosa (tashelhit: afess)	tanning agent (black wattle bark)
Mrrakesh or Mrrakush	Marrakech
mrrakshi (tashelhit: amrrkshi)	man from Marrakech
mrrakshyia (tashelhit: tamerrakshit)	woman from Marrakech
msmen	Moroccan pancakes
Muḥarram	1 st month of the Islamic lunar calendar
Mukhtaf	neighborhood next to tannery quarter in Marrakech
mūs (tashelhit: ajenwi)	knife
n'na'	Moroccan mint
ndūb	scars

nekhla	palm trunk
nokhāla	wheat bran
oued Issil	Issil river
pikāla	bicycle
qdīm(-a) (tashelhit: aqdim)	old
qṣrīa	round vat
qṣūr	cork oak bark plaque
qzrah	pomegranate; dying material
raḥa	break
Ramaḍān	The holy month of fasting for Muslims; it is the ninth month of the Islamic lunar calendar
rḥa (azerg)	mill
riaḍ	old Moroccan house
Riaḍ Laarous	neighborhood in the Northern medina of Marrakech
romy/-a (tashelhit: aromi)	adjective for having Western/Roman influence
r-rbati	tanning agent (cork oak bark from Rabat)
s'kkin	tanner's beam
ṣabūn bldi	local black soap
ṣān´	day laborer

sedriya	knife-like tool for staking, scudding and trimming tanned skins
sheba	alum
shekfa	bucket made of clay; also a term for coin in <i>darīja</i>
sherish	washing of cured animal skin
shlaba	term for brush or squeegee; also act of brushing
shqān	opening of sheep/goat skins with a knife
Sidi Yaccub ed-dbbāgh	saint of tanners
sif	movable axis of mill; made from olive timber
sūq (sing.)	market
sūq b'tana	market for goat/sheep leather
sūq bgṛa	market for cow leather
sūq elkhānz	tanner's term for raw skin market; "the stinky smell market"
sūq jeld	market for raw skins
sūq le-gherraz	market of cobblers in Marrakech
sūq le-ghzel	wool and spindle market
sūq rahba qdīma	former grain market in Marrakech; today a square
sūq semmarine	popular market area in Marrakech

tabhirt	ancient potters' district in the East of Marra- kech' medina
tadellakt (tashelhit term)	waterproof lime plaster
taghma (tashelhit term)	safe inside of workshop for protection against dust and for exchange of goods
tagori (tashelhit term)	new tanning bath
tahlaoul (tashelhit term)	fig past; used in the past before tanning animal skins
tahrisha	whetstone for sharpening tools (same term for earth used for making clay for tajin)
takkut (tashelhit: takkawt) - takkut drawa takkut filala takkut todgha	tanning agent (gall of the tamarisk tree) - tamarisk tree gall from Draa valley tamarisk tree gall from Tafilalet tamarisk tree gall from Todgha gorge
tamazirt (tashelhit term)	home (town)
taraza (tashelhit term)	term for a straw hat which the tanners use against sun protection
tarha	bundle of 6 pieces of goat/sheep skins
tariqa	Sufi order
tasafrrurt (tashelhit term)	kind of fan for equalizing shredded tanning agent on the circular stone base; fixed on the horizontal axis
tashelhit (darīja: shelha)	language of <i>Ishelḥin</i>
tayda (tashelhit term)	pine root

tblā	mushroom-shaped, and wall-fixed graining tool
tebshar	verb for working with <i>sedriya</i>
tlo'a	postprocessing (or currying) operations
tnaffas (tashlehit: sunfes)	breathing
tono	drum for liming
ziq'in	knife-like tool for fleshing skins on tanner's beam
zit dyāl zitoun	olive oil
zitoun (tashelhit: zaytun)	olives
ziwani	yellow dyed leather; known for Marrakech
ziyara	pilgrimage of the Seven Saints in Marrakech

Abstracts

The anthropological study on leather craft in Marrakech (Morocco) shows that this centuries-old craft is shaped by a constant tension between historical tradition and contemporary modernity. A temporal comparison of Danièle Jemma-Gouzon's ethnography *Les Tanneurs de Marrakech* (1971) with contemporary empirical data collected through classic ethnographic methods in 2023/24, analyzed via the framework of the *chaîne opératoire* and complemented with historical and archaeological sources reveals both continuities and changes. These are shaped by globalization, environment, social structure and organization, economy, (tacit) knowledge and skills, religion, the political system, (ethnic) identity, colonial legacies, and place/space. Theoretically, this master thesis is situated within material culture studies and the anthropology of technology, but aims to contribute towards an anthropology of crafts.

Die anthropologische Studie des Lederhandwerks in Marrakesch (Marokko) zeigt, wie dieses jahrhundertealte Handwerk von einer Spannung zwischen historischer Tradition und zeitgenössischer Moderne geprägt ist. Ein zeitlicher Vergleich der Ethnographie *Les Tanneurs de Marrakech* (1971) von Danièle Jemma-Gouzon mit aktuellen empirischen Daten, die 2023/24 durch klassische ethnographische Methoden erhoben, im Rahmen des *chaîne opératoire*-Ansatzes analysiert und durch historische sowie archäologische Quellen ergänzt wurden, offenbart sowohl Kontinuitäten als auch Veränderungen. Diese sind beeinflusst von Globalisierung, Umwelt, sozialer Struktur und Organisation, Wirtschaft, (implizitem) Wissen und handwerklichen Fähigkeiten, Religion, politischem System, (ethnischer) Identität, kolonialen Vermächtnissen sowie der Konstruktion von Orten und Räumen. Theoretisch ist diese Masterarbeit innerhalb der Material Culture Studies und der Anthropologie der Technik verortet, zielt jedoch darauf ab, zu einer Anthropologie des Handwerks beizutragen.