Mining cities in Central Asia and the South Caucasus: survival strategies under conditions of extreme peripheralisation

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Content

1 Mining cities in Central Asia and the South Caucasus: survival strategies under conditions of extreme peripheralisation

Rano Turaeva, Teona Mataradze, Wladimir Sgibnev and Zarina Adambussinova

1.1 Introduction

Post-Soviet "ghost-city" visuals depicting post-apocalyptic landscapes, abandoned factories and empty flats have become a prominent mainstay of online media outlets, and social networks such as *YouTube*, *VKontakte* and *Odnoklassniki.* These imageries relate to stories, which we find all over the former Soviet Union, and even more intensely so on the peripheries of the former Soviet empire. They tell us stories about the glorious birth of mono-industrial mining cities from tiny settlements to industrialised centres in the second part of the 20th century, and then their dramatic fall throughout the 1990s. Numerous private online users post highly emotional, nostalgic amateur videos and photos commemorating the good old times of Soviet single-enterprise towns.

The dissolution of the Soviet Union and its commanded-based economy was unpredictable, and had severe, and large-scale consequences not only for individual lives but for whole cities which were predestined to become either ghost city or turn into ruins (Siegelbaum 1997). In newly emerged countries, the economic shift and political instability in the initial years of independence led to the emergence of economically marginalized areas, with mono-industrial cities (known as *monogorod* in Russian), often being the prime victims of transition. These processes deeply affected the whole life of such places: employment opportunities, cityscapes, infrastructures, and everyday lives. The former symbols of Soviet modernity became objects of heated debates and discussions about their future fate, including government agencies, policymakers, scholars, businesses, private households, and activists. The most relevant and pressing issues for these places included as priority matters within those discussions were massive losses of industrial jobs due to shut down or privatisation of state-owned mines and fabrics, a high rate of unemployment resulting in impoverishment and out-migration, environmental hazards, and health issues, as well as violence and social tension (Round and Williams 2010).

The *monogorod* phenomenon is a child of Soviet-era industrialisation and urbanisation policies which have brought about settlements, towns and cities built around a single industry, specialising in mining of natural resources such as oil, coal, iron, or copper. Some cities were built around industrial plants – often relying on forced labour and relocated populations. The cities' socio-economic development completely depended on either single or a few so-called "town-forming enterprises" (Gusev 2012) yet were closely integrated within the unified economic system of the Soviet economy. These urban areas were mainly designed according to Moscow's directives without taking into account local specificities of the Republics' needs or taking into consideration of long-term effects and sustainability (Newton 1976, p.88). Some of these places served as 'closed' military-industrial complexes, e.g., for uranium mining, such as Kurchatov and Stepnogorsk in Kazakhstan.

For most residents, work at town-forming enterprises was often seen as the essentially significant identity marker (Nasritdinov 2012). Given that these cities were considered by the Soviet government as "areas of a special significance" (ibid.), most of them received generous supplies of a broad range of products and facilities, such as hospitals, schools, kindergartens, housing, cultural facilities, health resorts, pioneer camps, and so on (Nasritdinov 2012, 2015). The extra supplies or special attention to these strategic cities created around mining cities by the Soviet government was coordinated from the centre in Moscow under the framework of the so-called "Moscow provision" – *moskovskoe obespechnie* (Gleason 1989; Gorlin 1985; Pospielovsky 1987; Ross and Lane 1995). The personnel management and supply of specialists have been also ad-

ministered under the Soviet system of *rapsredelenie*. *Raspredelenie* is a Soviet style of redistribution system of graduates where each graduate is assigned to a specific location according to the demands of the centralised economy governed from Moscow. Such strategic *monogorod* or strategically important cities and enterprises would get the best personnel without the consideration of the geographic proximity and individual plans of a graduate who often had no choice but to follow *raspredelenie.* There was some space for using private channels to get a permission to be sent to a preferable location although this was limited to non-strategic professions and locations. These tools effectively served the Soviet government in the advancement of the processes of industrialisation, and centralisation of economic web of resource allocation and redistribution creating the unified economic and political system of Soviet governance regime centred in Moscow.

In addition, infrastructures and communal services were state-funded, in close cooperation with the town-forming enterprise. Mono-industrial cities became desired places, and centres of attraction for qualified labour and experts – islands of relative prosperity and focal points of technology and knowledge production circuits. The omnipresence of the Party-led state took the responsibility for all spheres of everyday life of households and their members, and mono-industrial cities were the ones most heavily relying on those resources. This strong economic interdependence within the Soviet Republics governed by Moscow was not made or planned that any of these Republics become independent and the Soviet rule collapses. The other way around the economy of the Soviet Union was designed to be interdependent to keep all Republics together and complement each other for maximum efficiency.

With the end of the Soviet Union, the Republics had to face the challenge of becoming economically and politically independent from Moscow. Although partly remaining under the Russian domination in terms of geopolitical and economic systems both regions Central Asia and South Caucasus reoriented their import and export channels and their roles within larger geopolitical scene (Syroezhkin 2012; Tomberg 2012). As a result, Moscow-centred system governance systems, knowledge networks and economic interlinkages rapidly collapsed. Mining operations were privatised, and subsidies stopped. Some cities with less competitive production profiles were hit harder than others. As a result, most of the newly independent economies in post-Soviet Republics collapsed and the industrial cities suffered mostly without financial support, investment, and demographic decline. Only sporadically and later, cities were able to benefit from targeted urban renewal campaigns such as in Russia or Kazakhstan. Indeed, mono-industrial cities based on oil or gas extraction fare exceptionally well.

Shrinking became an omnipresent phenomenon in peripheralised mining cities. This included both demography, scope of mining activities, investments, infrastructures, and the relative political weight of these cities on the national scale. Additionally, environmental and health conditions continued to deteriorate, e.g., when funds for tailing maintenance withered. Working conditions became not only economically precarious but also increasingly insecure, considering the lack of maintenance in mines, and the atomisation of economic actors. Economic collapse and the withdrawal of social security systems brought also a deterioration of basic health conditions. The persistent deterioration of infrastructures had severe consequences on accessibility, water supply and heating provision. In Shurab (Tajikistan), for instance, the water became non-existent and is currently transported from the next town and sold to the residents in cash.

With insufficient municipal funding, local administrations became more and more dependent on mining companies – in cities, where mining activities carried on, on a significant scale. Private companies, additionally, had privileged access to central state administration in the capitals. Thus, mining companies became the strongest power brokers in the city and held major control of infrastructure provision and planning, investments, employment planning, and other municipal political decision making. This can be seen in both of our case study cities in Chiatura in Georgia and in Jańatas in Kazakhstan whereas in Tajikistan the company is not so powerful anymore in the light of failure to compete in the coal market.

Soviet and post-Soviet governance of mining cities had a transformation from centrally planned economies of the Soviet state to private power based monopolistic corrupt governance regimes. Such processes as decentralisation and de-legalisation led to acceleration of the processes of informalisation at all levels of economic exchange, policy and governance, economic and industrial decline, demographic decline, growing uncertainty. Economic failure of the shrinking mining cities led to further uncertainties about the future of these cities in the light of stark demographic decline.

In the following, we attempt to provide a framework to put the findings of our research from three case studies into a perspective in order to be able to find common patterns and systematic approach. This will be done through situating this collaborative research results into a wider academic discourse on extractive industries and economic transition of mining cities in post-Soviet space. This also allows us to highlight cross-cutting themes which could bring very different mining cities but all cities sharing similar Soviet past.

Our volume includes three case studies of three mining cities in Georgia (Chiatura – Tatia Kartlelishvili), Tajikistan (Shurab – Dilshod Olimov and Carina Schweikart), and Kazakhstan (Jańatas – Zarina Adambussinova). Each case study is based on fieldwork conducted by doctoral students of the project, as well as on the field research conducted in 2015 and 2018 to 2019 by Rano Turaeva. The volume also includes a discussion of comparative survey results collected from all three cities (Teona Mataradze), as well as a collection of practice-oriented policy papers (Mathias Polak). The authors and contributors would like to extend their thanks to all local interlocutors, informants, translators and facilitators, as well to the administrative staff and numerous student assistants. Without their help, fieldwork in the challenging mining cities context would not have been possible, and neither would have been this edited collection. Not least, sincere thanks goes to the German Ministry of Education and Research for funding the project from an initial seed grant through to this phase, and to the Leibniz Association for assisting with the publication of the edited collection.

1.2 Mining cities: extreme peripheralisation

In academic literature, there is an increasing number of scholars from a large number of disciplines who draw their attention to socio-economic changes and challenges in post-Soviet single-industry cities (Kesküla 2018; Nasritdinov et al. 2010; Nasritdinov 2012, 2015; Printsmann 2010; Round and Williams 2010; Saxinger et al. 2016). Some studies have looked at the rise and fall of particular (ghost)-towns, design and planning of mining settlements in detail (Gentile 2003; Nasritdinov et al. 2010; Nasritdinov 2012), while others have explored in-depth outcomes of Soviet engineering in single-enterprise cities, especially with a major focus on environmental consequences and health issues of workers of mining areas (Prilutskaya 2016; Trevisani 2018), and emotional outcomes in the form of post-Socialist "backward-looking nostalgia" (Nasritdinov 2012; Pelkmans 2013). However, the issue on how individuals deal with negative consequences of a new present in their everyday lives and the making of post-Socialist existence in former single-enterprise cities still has received limited attention.

The cities chosen for our research are not the mining cities which experienced renewed boom after the collapse of the Soviet economy such as gold or oil mining. The cities we chose for our research are the ones which experienced a condition of "extreme peripheralisation" – a rapid decline demographically and economically, but also a distancing from knowledge flows and trade networks, a downshift in infrastructures, and deepening stigmatisation. As result is our research focus and research questions were formulated around the issues of infrastructural decay, individual coping strategies of the residents, environmental degradation, and health. Social and physical ecologies surrounding the residents of mining cities which gradually became almost ghost cities matter a lot to the residents and their survival strategies. It is crucial to first lay out the physical (both technical and environmental surrounding) and social ecologies of the cities where residents live such as infrastructures, services, environment, and opportunities.

Over the past decade or so, infrastructures have gained a central position for research in social sciences, no longer subsumed under other processes. Inspired by the idea of studying the unstudied (Star 1999), a number of researchers have focused on infrastructures, leading to declarations of an "infrastructural turn" (Graham 2010). We can thus observe the emergence of 'a new genre of thinking that narrates the social life of a city through its material infrastructure' (Amin 2014, p.137). A change of perspective from assuming infrastructures to be in the background to shifting them to the fore of thinking about cities and societies is on the way (Amin and Thrift 2017; Coutard and Rutherford 2016; Guy et al. 2001, 2011). Cities and states have changed the ways in which they deal with established infrastructures (such as privatisation and financialisation) – all the more so in mining cities, where a remake of infrastructure governance and practices has been the norm rather than the exception.

What is more, infrastructures are seen as not purely technical phenomena, as they tended to be understood previously, but as incorporated into social practices (Farías and Bender 2010; Graham and Marvin 2001) has changed the focus of social research: it has become much more attentive to technical aspects that were previously considered to be merely the concerns of engineers.

Processes of spatial production with regard to urban infrastructures in the post-Soviet periphery have not been investigated systematically yet (Axenov et al. 2006; Tuvikene et al. 2019). Only recently, the (re-)discovery of cities on the post- Soviet periphery occurred (Heleniak 2010). However, the majority of research focused on the economic growth of the respective republics (Sykora and Bouzarovski 2012), although work on survival strategies in cities is still rare (Alexander 2007; Brown 1998). An emergent field which though dedicates itself only partly to urban infrastructures, but largely encompasses analysis of energy governance and energy poverty in a post-socialist context (Dörre 2012; Kraudzun and Samimi 2012). Some former mining towns have been examined focusing on mining damage and risk minimization, such as the unsecured uranium tailings in southern Kyrgyzstan's Mailuu-Suu or on the subpolar Kola Peninsula (Cyffka and Zierdt 1994). These were mainly works done within the fields of geology and technical sciences. A socioeconomic analysis of urban infrastructure and relevant surviving strategies from a bottom-up perspective in former mining cities is still missing.

Our collaborative research results contribute to the building of a body of academic literature studying post-Soviet mining cities and the economic decline of previously booming Soviet industrial centres, which became now the peripheries of the newly reconfigured capitalist markets (Russia, China among other new players relevant to the region). We largely draw on the existing body of literature on mono-industrial towns in the territory of the former USSR (Scarpocchi 1999) and comparing similar experiences of urban decline from non-Soviet regions such as China, US, Germany, and Japan (Buhnik 2010; He et al. 2017; Martinez-Fernandez et al. 2012).

Besides economic hardships, demographic decline is one of the deciding developments which hit those mining cities making them partly ghost towns (Graves et al. 2009; Heleniak 2009). Personnel which was previously managed through Soviet *raspredelenie* politics had to newly negotiate and deal with the demographic decline. The population shrinkage is accompanied by an increase of rural economic practices including urban subsistence farming, provided the population has access to land and water. In Chiatura, this is partly possible, whereas in Shurab it remains a dream in the light of the absence of secure water provision. Both outmigration and return migration are partly observed for instance in Chiatura. The available explanatory models, such as social resilience and adaptability (Bouzarovski and Poputoaia 2010); culturally anchored immobility (ibid.); adaptation to the living space as a substitute for relocation; role of social capital as a barrier to move (Round and Williams 2010) or agglomeration effects, as well as (im-)mobility theories of the mobility turn are some of the models which could be well applied to our case studies.

1.3 Governing peripheries: Soviet and post-Soviet governance of shrinking mining cities

The Soviet-era style of governance, using a variety of governing and administration tools based on collective mind, collective farms, collective efforts, and command-based economy commanded from Moscow with the help of local governments in the Republics still can be partly traced in our region of concern. Heavy investments into infrastructures, subsidies of the strategic industrial centres and forced population and personnel movements were crucial methods and ways how Soviet economy worked – or did not work. Soviet nostalgia, reminding of a glorious past is still present in the discourses of the residents of former booming cities who, for instance, enjoyed *moskovskoe obespechenie*. Both nostalgia of the populations of post-Soviet countries as well as governments of the same countries can be traced within the discourses and practices of daily living and governance of the shrinking cities (Krickovic 2014; Lee 2011; Nikolayenko 2008).

With the end of the Soviet Union the central governance system also collapsed, all while mining was largely privatised, and subsidies stopped. Some cities with lower scale or with less important minerals were hit more than others which had more attractive minerals or other products such as oil, gas, or gold. There are numerous books and articles devoted to the studies of the structure of the Soviet government and its systems of governing written by both Russian and western scholars (Gleason 1989; Gorlin 1985; Pospielovsky 1987).

What did replace the state in Moscow, how has the political power been organised in the post-Soviet period and how are the mining cities administered without such subsidies as *moskovskoe obespechenie* and centralisation of the resource distribution? Are these cities largely depending on mining companies? Is the governance system decentralised, democratised and as new actors are appearing, turning to neoliberal?

Scholarly works on post-Soviet governance has, for long, been dominated by discourses on weak or fragile states following the literature on African states and failed states (Bøås and Jennings 2007; Mazrui 1995; Scott 2020). This discourse has had more negative views about processes of state formation and development, whereas the developmentalist approaches intended to support failed states towards a more delivering or strong states (Call 2011; Chen 2019). Chen (ibid.) shows how the informal economies of Somalia filled the gap of the non-existing state which had a positive impact on the development of local economies and livelihoods.

These debates also led to significant confusions in terms of how we define the states which cannot perform but are strong in terms of total control over their national boundaries, nationalistic discourses, and undemocratic and totalitarian authoritarian style of governance. This led to the next debates which took a more positive approach in studying states and governance in the Global South. Hybrid political orders (Boege 2019; Hoehne 2018) are such a theoretical tradition where various actors and institutions both state and non-state take active part in the governing resources, delivering services and provision of basic social security, investing in the infrastructure. In case of mining cities, mining companies can be analysed as one such an entity which takes significant part of the state role in a given location.

Hybrid political orders came as a discourse developed to respond to the negative views about weak or fragile states and offer a more positive approach to current political orders and state formation. Boege et al. (2008, p.10) provide the following definition of such a condition of governance systems:

> *Regions of so-called fragile statehood are generally places in which diverse and competing claims to power and logics of order co-exist, overlap, and intertwine, namely the logic of the 'formal' state, of traditional 'informal' societal order, and of globalisation and associated social fragmentation (which is present in various*

> *forms: ethnic, tribal, religious...). In such an environment, the 'state' does not have a privileged position as the political framework that provides security, welfare, and representation; it has to share authority, legitimacy and capacity with other structures. In short, we are confronted with hybrid political orders, and these orders differ considerably from the western model state.*

Post-Soviet statehood went through the challenges of the collapse of the centrally managed Soviet economy and rule. Some post-Soviet states were more successful than others taking diverse paths of economic and political development. Post-Soviet Central Asia is still suffering from the authoritarian regimes where failed state models could be easily applied if one considers not delivering states and populations are left on their own to survive economic hardships and political uncertainties (Burkhanov 2018; Urinboyev 2016). The post-Soviet Caucasus did better economically and politically, although still challenged by conflicts over contested territories and ethnic conflicts (Geukjian 2016). Both post-Soviet governance patterns developed in both regions adopted some principles of market economies and western democracies brought by new western actors still keeping some of the Soviet style models of governance whereas other non-state actors with economic capital also entered the political arena of negotiating power and authority over scares resources. As a result, we can observe such governing models similar to those defined as hybrid. Hybridity allows flexibility in form of governance where both formal and informal channels can be put to use. Studying hybridity requires a more in-depth gaze into the daily workings of politics and economic survival. Anthropology is best equipped to study such diverse forms of existence and governance in the context of political and economic insecurity.

1.4 Anthropological studies of mining cities

Previous anthropological research on the mining industry addressed questions of labor, capitalism, and modernity (Ferguson 1999; Nash 1973; Taussig 1980). Ethnographies were produced on such mining cities and other places in Latin America, Africa and lately also in China, US, and Germany. Among popular writers are those within symbolic anthropology such as Tío, who writes about the devil spirit to whom Bolivian miners made offerings of coca and alcohol in return for his help in finding a rich vein of ore (Nash 1973; Taussig 1980, p.143). In the same tradition, Taussig (1980, p.xi) describes the devil as a "stunningly apt symbol of alienation" that condenses "political and economic history." With its reflective eyes and gaping mouth, the devil of the tin mine became an iconic image for a generation of ethnographers seeking to combine symbolic anthropology with the study of political economy, especially scholars studying resistance to capitalism.

New technologies of mining have also transformed labour politics since the publication of the classic anthropological works on mining in the 1970s. The underground tin mines of Bolivia employed a large, unskilled labour force that worked under hazardous conditions. Labour was easily replaced if workers went on strike or were injured or killed in mining accidents. In contrast, the new open-cut mines are capital intensive. They employ relatively few workers, and their ability to organize has been weakened by new regimes of temporary and subcontracted labour (Smith and Helfgott 2010). Although labor conflict in the mining industry has not disappeared, its political significance has been greatly diminished (Helfgott 2013).

As Ferguson (1999) notes with regard to Zambia's copper industry, the promise of modernity continues to elude mineworkers on the margins of the global economy. The new generation of open-cut mines also produces fifty times the waste rock of underground mining (Ripley et al. 1978, p.36). These projects turn mountains into craters in a matter of years.

Nash (1993, p.17-18) observes on Bougainville Island that "the destruction of the landscape has enormous power – it is a cataclysmic event (...). The land is not only for material benefit, which compensation payments reduce it to; it encodes their history and identity and is a major source

of security." In extreme cases, the environmental impacts from large-scale mining projects can be so pervasive that people come to question their fundamental assumptions about the natural world (Kirsch 2006). Another most recent approach advanced by Pijpers and Eriksen (2019) who proposes the use of term mining encounters. Mining encounters, which bring together different scales of operation, resources (including oil and gas) and life worlds, enable an approach that scrutinises processes of negotiation through the study of specific events, people, and discourse, while connecting them to larger-scale processes. This perspective situates resource extraction in the particular sets of histories and social, political and economic relations of specific localities (Gilberthorpe and Rajak 2017) – an approach which corresponds with and builds upon that of the anthropology of resource extraction more broadly (see, for example, Ferguson 1999; Geenen 2015; Kirsch 2014; Luning 2012; Luning and Pijpers 2017).

The most recent anthropological on mining cities took a more holistic approach when studying mining cities and urban spaces in mining cities. One of these approaches follows a more Marxist tradition discussing the so-called "mining capitalism" (Kirsch 2014) and more practice-based approaches. Others studying generally urban conditions considering power and networks proposed "multiscalar perspective" in studying urban spaces of today (Glick Schiller and Çaglar 2018). There is a large body of literature looking at shrinking cities and monocities by now (Bontje 2004; Martinez-Fernandez and Wu 2009; Pallagst et al. 2013).

1.5 Methodological challenges of the research collaboration

The case studies collected in this volume are based on data collected by the research team composed of four doctoral students and also partly by senior researchers of the research project in three cities in Georgia, Kazakhstan, and Tajikistan (2015, 2018, 2019). Three cities (Chiatura, Jańatas and Shurab) have been chosen based on their economic and demographic situation, in order to investigate residents' negotiations with mine closures and generalised socio-economic difficulties.

The research collaboration for this research project was designed to address pressing economic, political, and ecological issues in post-Soviet mining cities in Central Asia and Caucasus. Therefore, the methodology of this collaborative research effort was also thoroughly planned, coordinated, agreed, and discussed in various team meetings, workshops, roundtables, and other discussions. Both quantitative (household survey) and qualitative (interviews and observation) methods have been used to collect data whereas the quantitative methods have been coordinated by a senior researcher who pooled all the quantitative data applying a comparative method of analysing the data from all the three cities (Mataradze, this volume). The comparative approach enabled a larger overview of demographic, and socio-economic background information of cities and its residents. The questionnaires for the quantitative survey for all the cities have been developed together during the methodological sessions of the workshop before the fieldwork began. Qualitative methods included interviews with residents and experts, mental mapping, participating observation in the case study cities. Qualitative data which have been individually managed by each researcher in each city enabled to gain a closer insight into the daily survival of the residents and understanding of the local dynamics of the city governance and resource governance within the shrinking cities.

The conclusions (Mataradze, this volume) drawn from comparative analysis of all three cities indicate that migration was a widespread surviving strategy of residents of all the cities. Property ownership was also widespread, which largely contributed to the economic safety of the residents of the mining cities. The other findings of the data indicate that infrastructure of the cities have significantly deteriorated after the end of the Soviet Union – even if its emic perceptions vary.

The results of the qualitative data, shown in more detailed in the individual case studies in this volume, also support the findings of the comparative quantitative data. At the level of the residents' daily survival in declining or devastated mining cities our research indicates that there are not only diversity of actors participating in the formal decision-making processes, but also informal institutions and networks make an important part of economic lives. These institutions which have been closely looked by the research team were credit regimes (both informal, institutionalised), debt systems (Adambussinova, this volume), migration and remittance economies (Kartlelishvili, this volume), and entrepreneurship (Olimov and Schweikart, this volume).

1.6 Overview of the case studies

The first case study by Adambussinova is a study of the phosphate-mining city of Jańatas in Southern Kazakhstan. The study shows "how despite significant changes in economic and political landscapes of the country, informal non-institutionalized economic practices remain to be essential in conducting daily life for the majority of local population in the post-Soviet monotown". The article is based on data collected within the framework of the research project and fieldwork in Jańatas in 2018 using a mixed-methods approach. The findings of this case study indicate that there has been a diversity of economic strategies employed by the residents of Jańatas such as life-cycle celebrations *(toy),* and what Adambussinova called "debt economy". This refers to classical anthropological themes starting with Malinowski to today's anthropological economies of debt (Hours and Ahmed 2015). Adambussinova`s material on the economies of debt is an empirical contribution to this literature showing how residents of collapsed economies or of no functioning economies economically survive. This study also shows how social networks make the basis of daily survival replacing state welfare systems and state-regulated markets.

The second case study of this volume is doctoral research on Chiatura, located in Western Georgia. The paper by Kartlelishvili (this volume) details economic survival strategies of its residents, providing a detailed comparative analysis of socialist and post-socialist transition of the city's economy, politics, and infrastructure. The examples are drawn from different working areas and conditions, such as employment in the private or public sectors, self-employment, and entrepreneurship. The author shows in her contribution that the monopoly of economic and political power belongs to the manganese mining company which is clearly observable in the governance principles, city planning and financial distribution of the social security and city investments.

The third case study concerns Shurab, in Northern Tajikistan, where coal is still being produced, but the city almost disappeared and turned into a small village with barely 3,000 people living in the ruins. The contribution of Olimov and Schweikart addresses the current solutions to the major problem – lack of water as a result of border and water conflicts between Kyrgystan and Tadjikistan. The initial findings of this study reveal "that major survival strategies include outmigration or shift to subsistence farming". The latter being problematic in the light of the total absence of water, outmigration and seasonal labour migration remains major survival strategies.

1.7 Future research in mining cities in post-Soviet region

Mining cities research as we also show in this volume is not a young field where anthropologists (starting with the Manchester School studying Zambian mining cities) and other scholars contributed to this ever-growing scholarly field. Current global challenges including diverse forms of crisis (environmental, health and econonomic crisis) as well as local responses at different scales (national, urban, rural) require a more systematic studies of mining cities and their fate after deindustrilication and demographic change. Particularly anthropological approaches to studying extractive industries and mining cities are important. The cities brought within this

volume are the examples of physical and economic destruction where residents try to make their daily ends meet. Systematic research into the economic alternatives for the devastated post-Soviet mining cities is necessary to offer more analysis and political solutions to the pressing issues. Economic and political innovation of diverse state and non-state actors within this context is an important focus which deserves a more systematic approach. Existing theoretical frameworks to study current political regimes, hybrid forms of political orders, governance, and economic survival. The empirical realities of the shrinking post-Soviet cities offer a good material to contribute to the existing theoretical models which are largely based on African or other empirical examples.

There is by now a well-established research on shrinking cities, shrinking mining cities, mining cities in Africa and Latin America. Systematic research in post-Soviet mining cities is still a young field to explore academically. Legacies of the Soviet past, economic transition to fit the demands of the market economies and development, addressing ecological disasters in all of the mining cities and political transitions are the areas to enquire for the future research based on systematic and fundamental scholarly enquiry.

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2 Comparative overview of survey data from three mining cities

Teona Mataradze

2.1 Introduction

In this working paper, I explore findings from the quantitative data which has been pooled from three case studies, in order to trace some common trends, or test the comparability of the material gathered from the three cities in Central Asia and the South Caucasus. The questionnaire for the survey was developed together with the project team, all while I coordinated the collection of the quantitative data. In this paper I will present the results of the comparative analysis of the survey data which has been pooled and analysed using SPSS software.

Debates about the results of the transformation taking place after the dissolution of the Soviet Union were long and still are under the question whether the Socialist legacies remain relevant or not. The idea to study mining cities strives to see the common and different living conditions in the areas, which were having the same historical destinies, but at the same time differ by size, geopolitical location, economic and natural resources, political structure, culture, etc. Considering the contextual differences of the target areas, we opted for a mixed-methods approach, combining both quantitative and qualitative methods. The aim of the paper is to describe and compare the demographic characteristics of the population, economic conditions of the households, and the urban environment of the three target cities. The survey results revealed that although mining is still a major economic profile of the cities, it is not the main or sufficient income-generating source of livelihood for the local population. In the overall economic insecurity typical for all the targeted mining cities, residents searched for other ways of survival: migration seems to be one of these strategies, especially common to Chiatura (Georgia) and Shurab (Tajikistan). Furthermore, findings of the comparative analysis indicate that the urban environment is unequally developed, and the urban infrastructure as well as the housing remain to be untouched since the Soviet times, implying that technical conditions and other physical conditions are outdated and suffering from decay, which causes the scepticism of the population towards the cities' future development prospects.

2.2 Methodological approaches

This study is part of a large research project devoted to the examination of survival strategies in mining cities in Central Asia and the Caucasus. In terms of the project, three post-Soviet cities (Chiatura, Janatas and Shurab) have been chosen for individual case-studies. Therefore, for the methodological part of the project, a combination of quantitative (household survey) and qualitative (interviews and observation) methodological techniques have been selected as the most appropriate methods of data collection. In particular, the approach enables the research teams to create a comprehensive socio-economic profile of each city involved in the project, to take into account the voices of the local community and get a deeper understanding of their situations and actions, and, finally, to indicate similar and diverse patterns in post-Soviet mono-industrial cities for a large comparative study on three case studies.

The research team was composed of three doctoral students who collected data in three cities in Georgia (Chiatura), Kazakhstan (Janatas), and Tajikistan (Shurab) and senior researchers based in three countries and in Germany who actively supervised the work of the junior researchers in addition to their own research within the project. The survey questionnaires were developed jointly by all team members and have been translated into local languages in order to ensure future comparability. The questionnaire consisted of different blocks: data on household members, migrant members, economic parameters, housing conditions, evaluation of city infrastructure – 390 variables altogether. Prior to the fieldwork, the questionnaire was tested in Janatas and Chiatura to ensure its feasibility and fit for local context before the translation of the questionnaires was carried out (Georgian, Kazakh Russian, and Tajik). The vocabulary has

been adapted using the results of the feasibility test survey. After the pretesting phase, the field-work was carried out by the PhD students from October 2018 until the end of January 2019.

The sample design was stratified by the neighbourhoods and slightly differed in each city. In Chiatura and Janatas, where the population size is approximately the same (around 20,000), the sample size was divided by neighbourhood sizes based on the previous census information. For choosing households, the random walking approach was used (in the blocks of flats, the step size was 7, in private settlements – 5). Respondents were chosen randomly from the household. In the case of Shurab, with a lower population size (approximately 4,000) households were chosen by random walking, while respondents were chosen randomly from each surveyed family. The information was gathered through face-to-face interviews, the duration of the interview was approximately 40 minutes. In Chiatura 281 interviews were conducted, in Janatas 151 and in Shurab – 100. The survey collected information about 1,978 residents of these cities, which gives the possibility to describe the cities' population by their characteristics. Below the data analysis will be presented according to the relevant topics which have also been allocated in the survey questionnaires conducted in all the three cities.

2.3 Household structures and demographic characteristics

The comparison of the three cities shows that the demographic picture of Shurab (Tajikistan) is more promising (larger households, no tendency of ageing) than in the mining cities case studies of Georgia and Kazakhstan. The mean of household size is higher in Shurab (4.16) than in Janatas (3.77), and Chiatura (3.45). There are the least single-member households and the largest families (for instance consisting of 13 members) in Shurab, while in Janatas 13.2% of families consist of only one member – although the largest family size in Janatas is 11 members. In Chiatura 11.7% of households are single-member and the largest families consist of 8 members. In all three cases, the mode of the family size is 3 members. The gender distribution of the population is almost the same in all the three cities with a slight majority of women over men (approx. 53% female, 47% male).

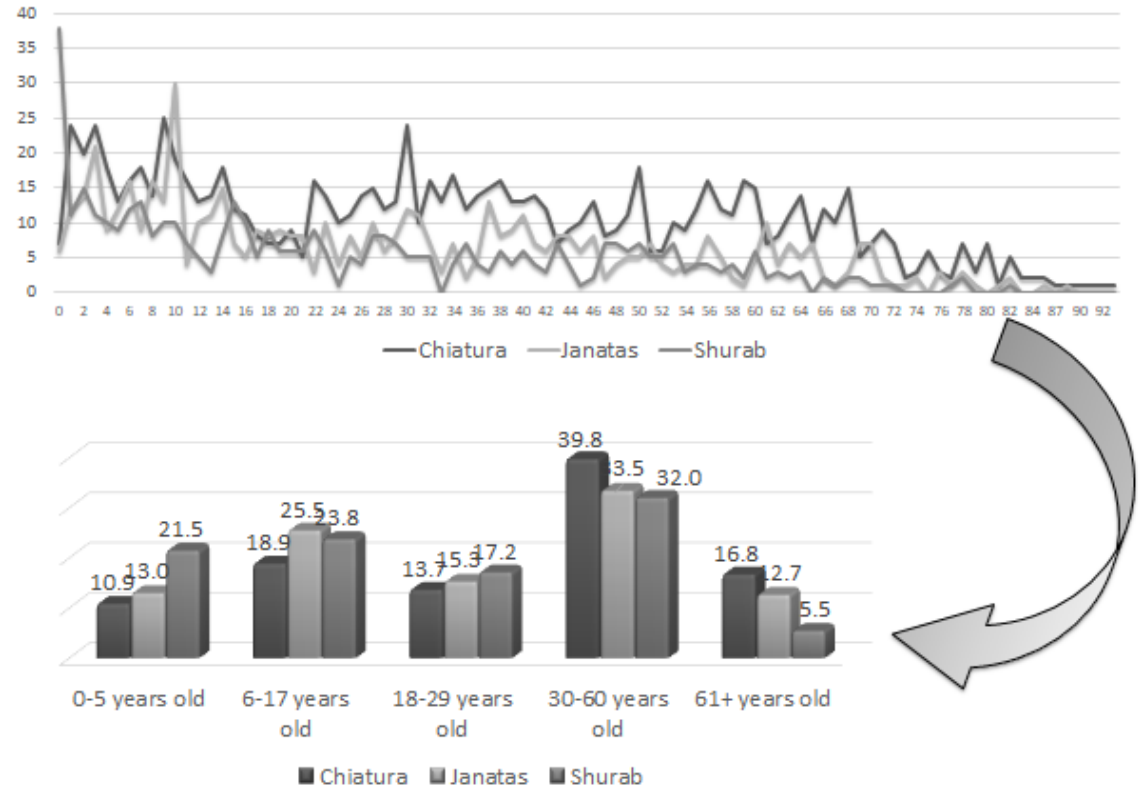

Figure 1: Age distribution of the population in the three mining cities (%) (N=1978)

The ageing process is most vivid in Chiatura (with the least underage population and the largest proportion of people over 60 years old). 45.3% of Shurab's population is under 18 years old, while people over 60 years consist of only 5.5% (Figure 1). Due to the large share of the youth in Shurab and Janatas, almost half of the residents have never been married, while in Chiatura, 69% are married as the largest part of the population (39.8%) are between 30 to 60 years old. In all cities, the youth (18 to 29 years) are narrowly presented as they leave the cities for education towards the larger towns or capital cities. In all the discussed cases the share of the population who are cohabiting is less than 1% which can be related to traditional lifestyle.

The educational background of the population strongly differs between the studied cities (Table 1): In Chiatura 40.3% of the population have completed higher education, while in Janatas only 14.2% of residents have a university degree and in Shurab this amounts to only 7.4%. In order to evaluate the educational background of the mining city population, the data is compared to the general data of the countries provided by the national statistics agencies. In Tajikistan the share of population with higher education is 7.7% and thus reflects similar proportions as in Shurab (Agency of Statistics under the President of the Republic of Tajikistan 2017). The share of population with higher education in Kazakhstan is 15%, which is approximately the same as in Janatas (Ministry of Education and Science of the Republic of Kazakhstan 2014). In Chiatura the educational background of the population is slightly lower (According to the Census conducted in 2014, the share of adults with higher education composes 45% (National Statistics Office of Georgia 2015). The technical/vocational education, which is more relevant for the economic profile of the mining city, is mostly obtained by the residents of Janatas (21.2%) than by residents of Chiatura (15.1%) and less by those living in Shurab (10.8%).

Among the studied cities, the most mono-ethnic (98.9% are Georgians there) and mono-religious (98.6% are Christian orthodox) is Chiatura, while in Shurab 94% residents are Tajiks (3.2% Uzbeks, 2.5 Kyrghiz and 0.3 Tatars) and 97.2% are Muslims. In comparison to the other two cities, Janatas is the least mono-ethnic and mono-religious, with an 81.3% share of Kazakhs, 14.1% Russians and 76.5% Muslims, 14.2% non-believers and 5.7% Orthodox.

Table 1: Educational background of mining city dwellers (%) (N=1978)

	Chiatura	Janatas	Shurab
No primary education	0.1%	23.3%	29.0%
Primary education only	1.5%	9.4%	6.4%
Incomplete secondary education	0.9%	5.9%	7.1%
Complete secondary education	36.8%	22.1%	33.7%
Technical/vocational education	15.1%	21.2%	10.8%
Student	0.1%	2.3%	4.2%
Incomplete higher (University)	5.0%	1.6%	1.5%
Complete higher University	40.3%	14.2%	7.4%
Post graduate/scientific degree	0.1%	0.0%	0.0%

The survey presented that the cities also differ by the duration of population residing in the locality. 64.7% of Chiaturians indicate that their ancestors also lived in the city, while in 76.2% of households' ancestors in Janatas moved here from some other places. The resettlement during the Soviet period to the mining city is more typical to Shurab, as 88% of the households moved from other places. As indicated in Figure 2, the main reason for moving to the mining cities were economic conditions, namely the available jobs. Marriage is the reason for movement namely for women and is more widespread in Janatas and Shurab. Some families choose mining cities as a destination due to expulsion from a previous place of residence, which is more widespread in Central Asia.

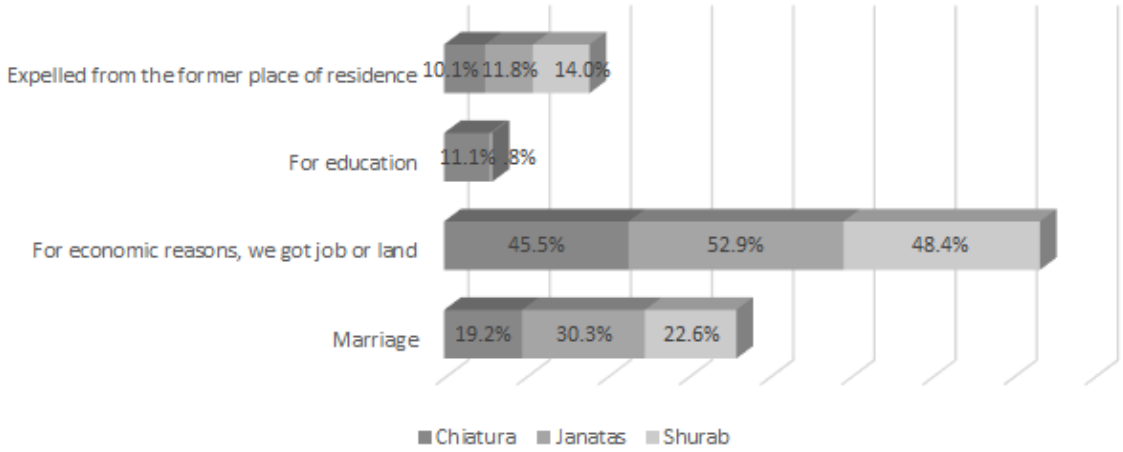

Figure 2: What was the main reason for moving to this place (move from last place)? * Name of the settlement, Cross-tabulation (N=311)

2.4 Employment and economy

As discussed in the theoretical part of the paper, after the dissolution of the Soviet Union, the economic profiles of mining cities changed dramatically. First of all, this was expressed in the employment structure of the population. The survey data showed that in Shurab 58.9% of the population is without jobs as the unemployment rate (self-esteem) in Chiatura composes 27.9% and in Janatas 21.2%. Jobs related to the mining are more widespread in Chiatura (28.9% of residents work in mining, while 10.6% work in construction work which is subcontracting to the mining company); 24.8% of the population in Shurab is employed in mining, while in Janatas this amounts to 20.9%. Almost the same share of the local population work for the public sector in Shurab 23.1% (mostly in educational services (34.1% out of employed) but also in healthcare and social assistance (9.3% out of employed)). In Janatas, the public sector employs more people (21.8%) than the mining sector, while in Chiatura the share of employed residents in the public sector is 16.2%. Self-employment is underdeveloped in all studied cities: In Chiatura 5.6% of residents are engaged in farming, which is not the case in two other cities, while in Janatas 8.8% of residents are self-employed in the non-farming sector. The non-governmental sector is underdeveloped in all the cities (there is only one person in Chiatura who reported working in an NGO).

As to the households' income-generating activities, in all the studied cities households have more than one source of income since none of the funds ensures overall social welfare of the families. As survey data showed in 62.1% of Janatas households, no household members receive a permanent salary. The figure amounts to 46% of households in Shurab, the same goes for 40.3% of households in Chiatura. In the majority of families in Chiatura (84.7%) at least one member receives retirement benefits, while in Shurab only 15.2% of the families have at least one pensioner household member. Relatives and kin create an important social security net for local residents in all studied cities. In Shurab, 24.1% of the households get a monthly assistance from relatives living in Tajikistan, while 56.1% of the families receive remittances from abroad. In Chiatura, 75.9% of households benefit from support from relatives living in the country, while 43.9% of families get the money from a relative/close people living abroad. The overall income of the families per household is the least in Shurab – ca. 46 EUR per month, higher is the average income of the households in Chiatura – ca. 126 EUR per month and the highest in Janatas with ca. 158 EUR per month.

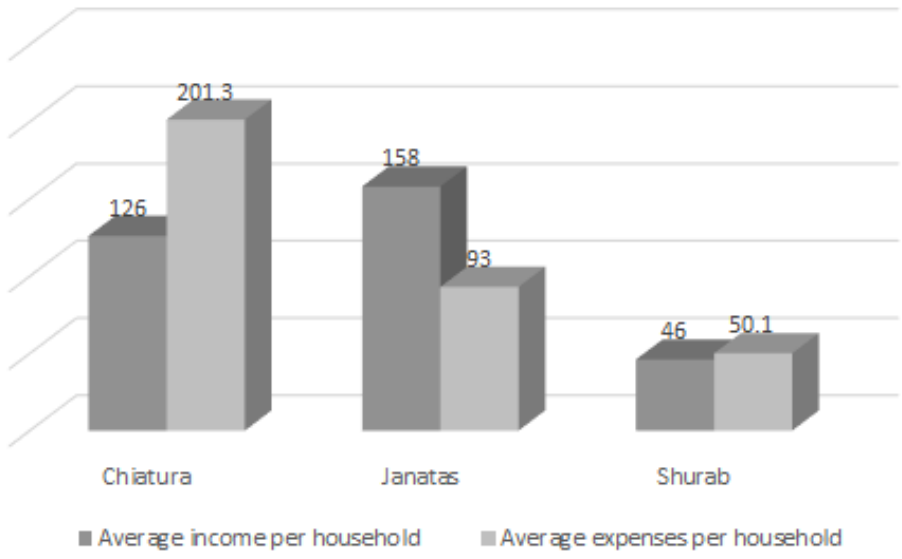

Figure 3: Average income and expedition per household per family (Euro)

In Chiatura, households spend the largest amount of money (ca. 201 EUR per month), then comes Janatas (ca. 93 EUR per month), while in Shurab the expenditures of the families are the lowest (ca. 50 EUR per month) (Figure 3). Due to the fact that the residents often consider only money coming from the official employment or through the banks as income, the data about the average income of the households might not be accurate, as according to the survey results the expenditure in Chiatura is much higher than the income. In mining cities, almost half of the family's expenses are spent on food, then for goods for households (but it is clear that this type of expenditure is not spent monthly). In Janatas and in Shurab, the income is a bit higher than the expenditure, which is usually in accordance to the data on families' savings living in those two mining cities.

In Shurab, 8% of households manage to save money; in Janatas 23.8% save money, while in Chiatura only 12.7% of the families manage to do so. In Georgia, families mostly address unexpected expenses through banks loans, why savings are less typical there. In Shurab, half of the households which manage to save money, do it for the education of their offspring (48.3%), others accumulate it for marriage (10.3%), children (10.3%), land (10.3%), livestock (6.9%) and rarely for family events (3.4%). In Janatas, families accumulate money for education (25.7%), for family events (11.7%), for marriage (11.4%) and other purposes. In Chiatura, a relatively small number of families accumulates money, and out of those who make savings 37.1% spend it for children, 28.6% – for education and 11.4% for family events.

In order to overcome economic hardships, in Chiatura it is widespread to address the government for social support, since in Georgia, the country's social policy depends on targeted social assistance (Mataradze 2011). Thus, 62.5% of the households turned to the local government for social aid in Chiatura; 21.9% do the same in Janatas and 25% of households – in Shurab. In Chiatura, almost one third (30.3%) of the families actually receive social aid, in Janatas – 7.6% and in Shurab – 3.8%. The share of families who were getting social assistance before but do not get it now is quite high is Chiatura – 17.2%. This is typical for Georgia, as social assistance beneficiaries are being checked at regular intervals, leading to some families (usually those whose member(s) started jobs, or got access to a new source of income) drop out of social assistance schemes.

Besides the objective estimation of the economic conditions of the families, residents were evaluating the level of their households' social wellbeing by themselves. The economic status of the households was evaluated on a 7-point scale, where -3 means extremely bad and 3 means excellent. As presented in Figure 4, the worst evaluation of their economic conditions can be seen in Shurab, and almost the same negative attitudes can be traced in Janatas, although by survey parameters, the family incomes in Janatas are even higher than in Chiatura, where the subjective evaluation of households' economy is more or less neutral (-0.7).

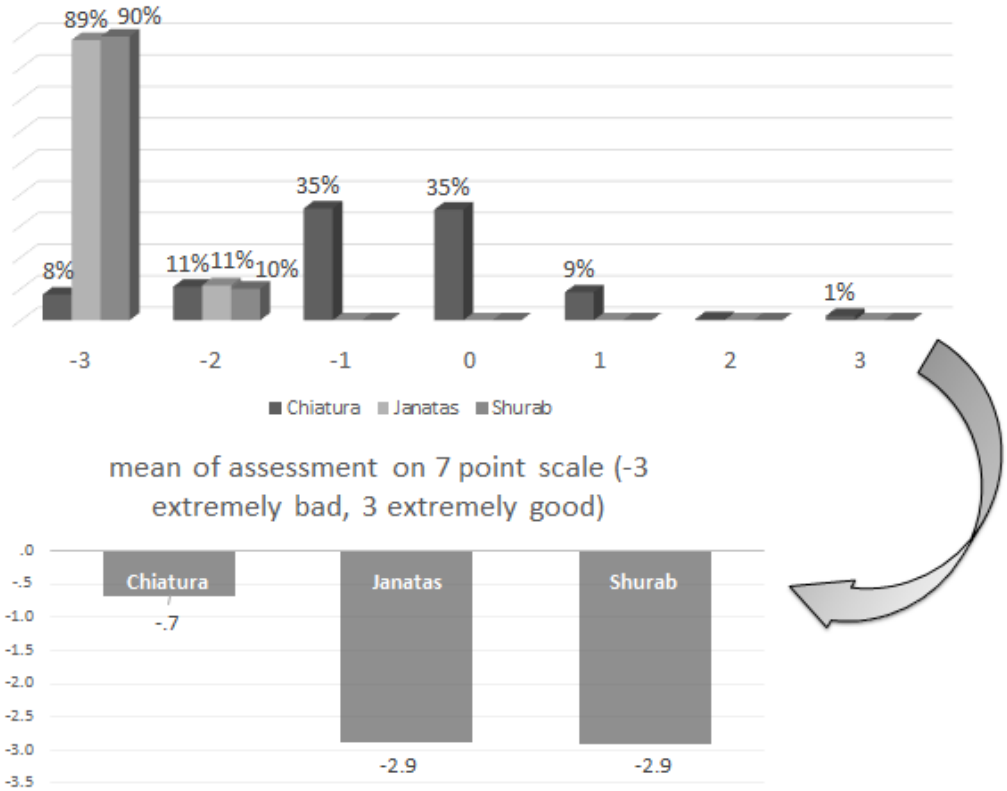

Figure 4: What is the economic status of your household at present? Can a household cover the expenses for making a living (basic needs)? (% and mean on 7-point scale, when -3 is extreme poverty and 3 is extreme welfare. (N=534)

The evaluation of the economic status of households correlates with the sources of income of the families (Table 2). The higher the household's salary over the past month, the better the evaluation of the economic status. A negative correlation is at play between pension and household economic status. Those families who receive more pensions, assess the economy of the household worse. Here, the subjectivity of the evaluation can be traced. Those families with more than one pensioner member esteem to be in a worse economic situation than those who do not have pensioners or less of them. The point that pensioners have no expectations for future economic improvements might be the case here.

Table 2: Correlation between the household economic status and different types of incomes over the past month

		what was your household income as a salary over the past month?	what was your household income from pension over the past month?
What is the economic status of your household at present? Can a household cover the expenses for making a living (basic needs)?	Pearson Correlation	.214**	-.371**
	Sig. (2-tailed)	.000	.000
	N	359	150

Another parameter to evaluate the economic conditions is the affordability of different items, as this parameter is stable in relation to local markets and prices. In Figure 5 you can see that the majority of the families in Chiatura (73.5%) cannot afford leisure, 25.4% cannot afford safe drinking water, 20.8% internet and 14.8% banking services. In Shurab, 59% cannot afford safe drinking water, 38% health care, 35% transport, 33.7% rent, 29% clothing, 23.2% education for youth and 21% banking services. In Janatas, the affordability of the listed items seems more achievable: the biggest problem there is the affordability of healthcare (22.5%), then banking service (15.2%), clothing (13.2%). In all mining cities, food is more or less affordable, although in Shurab 15% of local families, in Janatas 9.9% and in Chiatura 1.1% still report problems of nutrition.

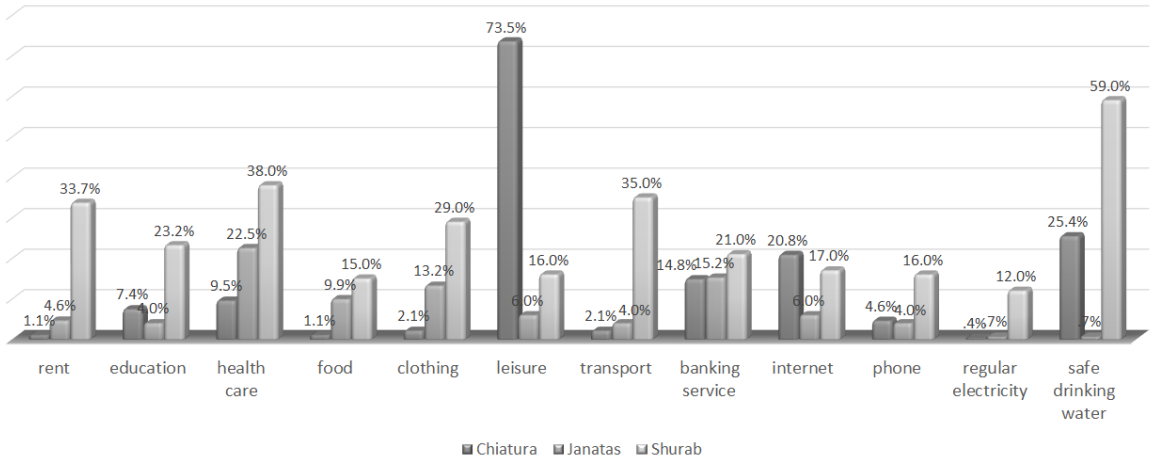

Figure 5: Cannot afford the following services or items by field sites (%) (N=534)

To sum up, the survey results show that between these three mining cities, the economic conditions of Janatas are better than in the two other cities – even if residents are not satisfied with these conditions and evaluate them as badly as in Shurab. The employment profile of Janatas shows that mining is not the main income for city dwellers (as only one-fifth of the residents is engaged in mining activities) and the family budget is generated through income out of employment in public and private sectors, self-employment, and other sources. In Chiatura, the mining sector still continues to be the main employer, although the families do depend on social assistance provided by the state and close kin. The economic conditions in Shurab are the most miserable, as the majority of the families do not have at least one employed person; families have the least income and problems affording health care, transportation, rent and/or education. The survey shows that in Shurab and Chiatura, access to safe drinking water is a big problem, although it is more connected to mining-related water pollution in Chiatura and to geographical and political issues in Shurab. The hard economic situation in the mining cities is somehow weakened by migration, which will be discussed in the following section.

2.5 Migration as a survival strategy in mining cities

After the dissolution of the Soviet Union, the mobility of the population between and out of successor states has increased. Political crises, ethnic tensions, and economic disasters made millions of ex-Soviet citizens search their ways out of their communities (either to urban centres, or to foreign countries), although the mobility of the population within the Soviet Union was not scarce either (see Sahadeo 2007). Our survey showed that migration is one of the survival strategies for the families living in the shrinking mining cities. The highest rate of migration from the studied cities was observed in Shurab, with 27% of the local households reporting at least one migrant member. In Chiatura, the share of families with at least one migrant member is 17.7%. In Janatas, migration is less prevailing, as only 5.3% of the families report at least one migrant.

The migration profiles of the mining cities differ. In Shurab and Janatas mainly male household members migrate (in Janatas 87.5% of migrants are male, in Shurab 76.5%), while from Chiatura female and male migration is almost the same (the share of female migrants is 52.5% and for male migrants 47.5%). The age of the migrants also differs by field sites (Figure 6). In Chiatura the biggest share of migrants is between 30 to 60 years old. In Janatas and Shurab the share of migrants between 18 to 29 years old is relatively high, while in Shurab, household members over 60 years do not tend to migrate.

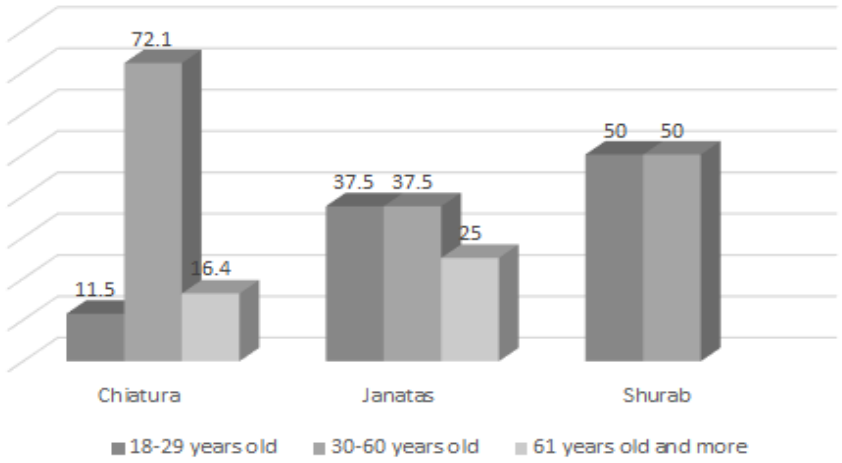

Figure 6: Age of migrants by field sites (%)

The educational background of migrants shows that the migration process does not equal brain drain: 39.3% of migrants from Chiatura report a university degree (while 40.3% of local population has higher education), 8.8% of migrants from Shurab have higher education (versus 7.4% of residents with the university degree). In Janatas the slightly bigger share of migrants has higher education (25%) than residents (14.7%), although the share of migrants is so low there that this difference cannot be considered significant.

All migrants from Janatas have the local citizenship which is not the case in Shurab and Chiatura. 54.5% of migrants from Shurab and 41% migrants from Chiatura have the citizenship of the host country, while there are some cases with double citizenship. 60% of migrants from Janatas have only a registration in their hometown, while 70.6% of migrants from Shurab have a double registration. There is a mix of strategies of registration in Chiatura: 37.7% of migrants are registered only in their hometown (which means that they are not living in migration legally), 29.5% are registered only in place of migration, while 19.7% are registered in both places.

The majority of migrants (53.1%) from Shurab were unemployed before migration, 37.7% of migrants were without a job before migration in Chiatura, as one-fourth of migrants were unemployed in Janatas before leaving the locality. 24% of migrants from Chiatura were working in the public sector before leaving, 11.5% were working in the private sector, 11.5% of migrants were students and 9.8% were self-employed in farming activities before leaving. 15.6% of migrants from Shurab were employed in mining before leaving the locality, while 12.5% were working in the public sector. Migrants from Janatas were either working in mining (12.5%), or in the public (12.5%) or in private (12.5%) sectors. Although the unemployment rate was not low in case of migrants before leaving, still having jobs does not hinder the process of migration from the mining cities, since the salaries from the local employment do not guarantee sufficient income for residents. The majority of migrants are employed in the places of migration in different sectors, although the biggest share of migrants from Chiatura (31%) are unofficially employed as household assistants in families, which mainly is the case of female migrants to Greece, Italy and Turkey.

A majority of migrants from mining cities send remittances to household members they left behind: 89.7% of migrants from Shurab send money, 87.5% of migrants from Janatas do so, while only 38.3% of migrants send money back to their families in Chiatura. Sending clothes or other household items by migrants to their families is not a widespread practice in any of the mining cities.

By the data presented here, the conclusion can be drawn, that the migration process is one of the survival strategies for the families living in mining cities. Who and where migrates and, how they help their families back in the cities depends on the socio-economic situation of the sending and receiving societies, which would be more highlighted within the qualitative material of the research.

2.6 Private property and living conditions of households in mining cities

During the postsocialist changes, the economic hardship of the population and orientation to the survival made local populations pay less attention to living conditions, which were deteriorating as the renovation or improvement of living spaces was scarcely available. The survey showed that a majority of residents owns real estate which they mainly acquired during the Socialist period via state housing policies. In Chiatura, 6.4% of the interviewed households do not have any private real estate property (house or flat in the city), in Janatas 13.9% of interviewed families do not have private property and in Shurab 25% of the residents lacking it.

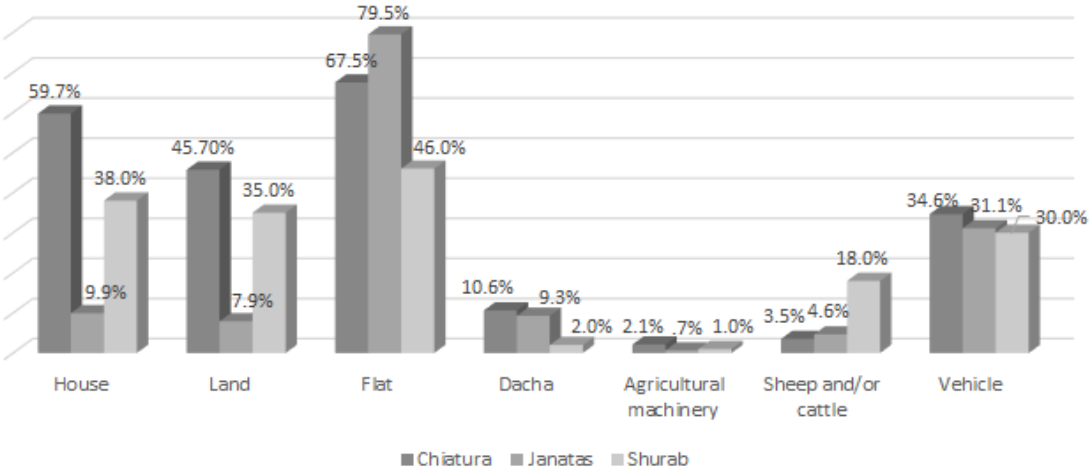

Figure 7: Owning property by field sites (%) (N=534)

As displayed in Figure 7, in Chiatura, the majority of households (67.5%) owns flats, 59.7% owns a house, thus 33.6% of residents own both a flat and a house. 45.7% of the households' own land (ranging from 100 sq.m to 50,000 sq.m, with an average plot size of 2,786 sq.m), and 58.2% of landowners also have a house in Chiatura, but these lands mostly are situated outside the city. Although households living in Chiatura own land, the owners rarely report other resources relevant for agricultural work such as agricultural machinery and/or cattle. In Chiatura every tenth family owns Dacha (holiday house), but often these houses are the hereditary property of the families from their ancestors living in the nearby villages. Every third family (34.6%) living in Chiatura owns a vehicle.

Most families (79.5%) living in Janatas own flats, 9.9% own the houses and only 3.3% of local families own flats and houses simultaneously. 7.9% of local households own land, and half of them own land around their houses. Similar to Chiatura, families living in Janatas hardly own other types of agricultural resources. 9.3% of families living in Janatas own dachas. 31.1% of local families own vehicles.

In Shurab, 46% of households own flats and 38% own houses, while 9% of them own both flats and houses. 35% of the households from Shurab own land and half of them own land simultaneously around the houses. Dachas are less owned by the resident of Shurab (only 2% owns it). Unlike Chiatura and Janatas, 18% of families living in Shurab own sheep and/or cattle. 30% of local families own a vehicle which is a valuable resource for ensuring water supply, which is not available at the locality.

The survey showed that families living in the three mining cities mostly own houses/flats with three rooms (36.9% of households in Chiatura, 42% in Janatas and 37% in Shurab) but generally ranges from 1 to 14. The average number of rooms for Chiatura is 3.11, in Janatas 2.74 and in Shurab 3.21. This means that in Janatas residents have relatively small living space at their disposal than in Chiatura and Shurab. Although the survey showed that the lack of living space can be traced only in Chiatura (indicated by 29.3%).

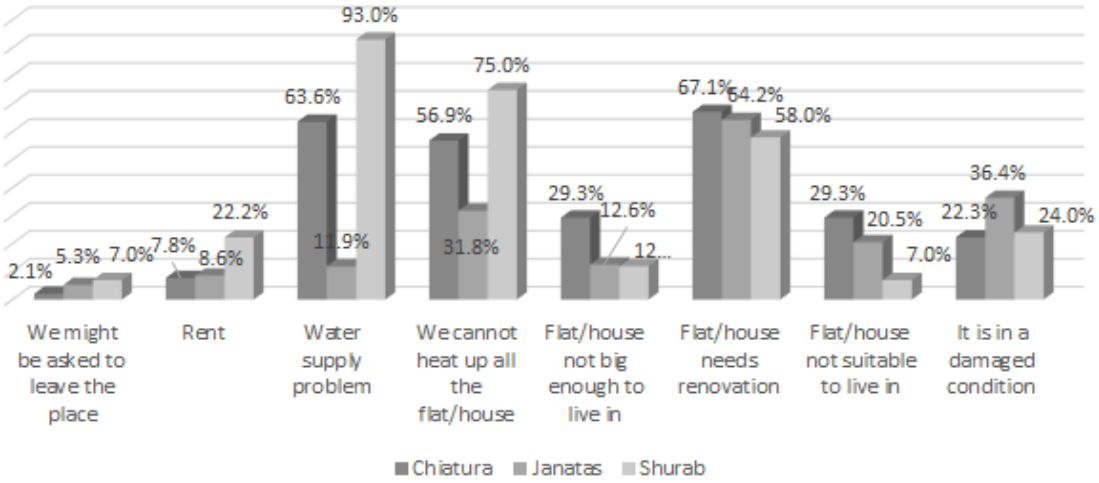

Figure 8: which problem concerns you in relation with your flat/house (% by field sites)

The survey highlighted the problems the residents deal with in relation to their living spaces. The overview of Figure 8 reveals that the households living in Shurab have bigger problems, especially in relation to water supply problems (93% of surveyed household members indicate it). 75% of households have problems with heating the house/flat. 58% of the houses/flats need renovation, 24% is in damaged condition, while 7% is not suitable to live in. 22% of the households have problems to pay the rent, while 7% of the households might be asked to leave the space as they live in space which belongs to others. The limited space of living is a problem for 12% of families living in Shurab.

The majority of the households (67.1%) living in Chiatura indicate that the flat/house needs renovation, 29.3% indicate that the flat/house is not suitable to live in, while 22.3% mention that the flat/house is in a damaged condition. The second greatest problem for residents is water supply which is polluted by manganese due to open mining and is not drinkable. 56.9% of the households cannot heat up the flat/house completely. 7.8% of the households have problems to pay rent for the flat/house, while 2.1% of families might be asked to leave the place.

In Janatas the greatest problem of the households is the renovation of a flat/house (54.2% indicate it). 36.4% mention that their living space is in a damaged condition, while 20.5% think that it is not suitable to live in. Heating up all the flat/house is a problem for 31.8% of the households; limited living space is a problem for 12.6% of the families. Unlike Shurab and Chiatura, the population of Janatas does not have an acute problem of water supply (11.9% mentions it and it is more connected to the unregular supply than to the pollution or shortage of water). To pay rent for the flat/house is a problem for 8.6% of the residents, while 5.3% is under the danger of being asked to leave the living space.

Table 3 Percentage of owning the listed items in working condition of long-term use by field site

	Chiatura	Janatas	Shurab
motor vehicle	35	32.5	31
Tractor (any type agricultural machinery)	5.6	0.3	1
Mobile phone	97.9	98.7	98
Washing machine	87.3	82.1	69
TV set	97.5	97.4	99
Refrigerator	94	92.1	73
Gas stove	92.9	95.4	41
Vacuum cleaner	47.3	63.6	44
Iron	94.6	94.4	87
Water heater	73.1	47	34
Individual system of heating and hot water supply	61.8	19.9	10
Microwave heater	38.9	51.7	17
Personal computer	50.9	41.1	73.5
Internet	65	37.1	26
Music center	9.9	11.3	19.2
Video or digital camera	12.7	6.6	6
Video player or a DVD player	10.6	25.8	69
Power generator	2.1	2	12
Satellite dish	20.1	35.8	68
Conditioner	10.2	15.9	4
Musical instrument	37.5	9.1	9
Toaster	46.3	4	1
Dish-washing machine	1.1	0	0
Food processor	59.7	4	8
Hair dryer	68.9	63.6	24.2
Euro-Remont	20.5	15.9	25

The questionnaire further covered the ownership of the household items. As Table 3 shows, in Shurab the majority of households lack most listed objects, while in Chiatura and Janatas households more or less report owning those. Mobile phones and TV sets are widespread in most families in all studied mining cities. Gas stoves are available in Janatas and Chiatura, but in Shurab only 41% of households have it. A refrigerator is mostly available in Janatas and Chiatura, but in Shurab 27% of the families are lacking one. Dish-washing machines are scarce in any field site. Owning different items is very much connected to the general economic conditions of the localities as well as the developed infrastructure of the cities.

2.7 Quality of life

Research in post-socialist mining cities already revealed a widespread decline of the infrastructure and facilities. Our questionnaire was oriented to investigate how the local population evaluates the conditions in three targeted cities (Table 4). Ecological issues are very acute for the residents of Chiatura (78.1% of the respondents indicate that it is extremely bad); in Janatas and Shurab the reported mode amounts to 3 – neither good nor bad. Roads are evaluated as average in Janatas and Chiatura, while in Shurab 73% evaluate them as bad or extremely bad. Shurab does not have inner-city transport, while in two other cities residents evaluate it more or less positively. The population of all mining cities is rather satisfied with inter-city transport. Central heating is not available in Chiatura and Shurab, while in Janatas the population evaluates it rather positively. Residents of Shurab indicate that in the city drinking water is not available; in Chiatura 88% assess it as very bad; in Janatas, the population is rather satisfied with water provision. In Shurab, the sewage system is not available, while in two other cities the residents evaluate it as average. In Shurab, utilisation of domestic waste is unavailable; in Chiatura the population evaluates it as good, while in Janatas 51.7% assess it as bad or extremely bad.

52% of households living in Shurab indicate that they do not have street lighting in the city, while others give mixed answers. In Chiatua and Janatas, residents evaluate street lightning as average. Residents of Shurab are rather satisfied with the medical facilities and services and polyclinics. In Chiatura and Janatas, city-dwellers evaluate polyclinics slightly better than other medical facilities and services. In Shurab, cultural and recreational facilities, social infrastructure and college are not available. In Janatas, 11.9% indicate that they do not have them in the city. Other in Janatas and all the respondents in Chiatura are rather content with their cities' cultural facilities. In Janatas and Chiatura, a majority of residents evaluate recreational facilities as neither good nor bad. The population of Janatas is more content with the social infrastructure than the population of Chiatura.

In all cities, schools and kindergartens are evaluated positively. In Chiatura, residents either think that they do not have a college in the city or cannot evaluate it, small number of respondents provide an average assessment. In Janatas, the local population is rather satisfied with the college. An orphanage is available only in Shurab and residents assess it as good or neither good nor bad.

Table 4: The average evaluation of the condition of facilities in the city by field sites (the mean evaluation when 5 means extremely bad and 1 means extremely good, N/A when the city does not have such kind of facility)

Settlement	Ecological issues	Roads	Inner-city transport	Inter-city transport	Central heating	Drinking water	Sewage system	Utilization of domestic waste	Street lightning	Medical facilities and services	Polyclinics	Cultural facilities	Recreational facilities	Social infrastructure	School	Kindergarten	Collages	Orphan home
Chiatura	1.3	2.4	3.1	3.6	N/A	1.6	3.0	4.0	3.8	2.8	3.3	3.6	3.2	2.7	3.6	3.8	3.3	N/A
Janatas	2.8	2.8	3.1	3.6	3.4	3.8	3.4	2.6	3.1	2.7	3.3	3.4	3.6	3.7	3.8	3.8	3.8	N/A
Shurab	2.9	2.0	N/A	4.0	N/A	N/A	N/A	N/A	2.8	3.7	3.7	N/A	N/A	N/A	3.6	3.8	N/A	3.7

The evaluation of the city facilities by the respondents shows that in Shurab the city infrastructure is undeveloped. Lack of drinking water, sewage system, utilization of domestic waste, cultural and recreational facilities, social infrastructure makes the town very problematic to live

in. The city infrastructure in Janatas and Chiatura is rather developed, although here the problems arise. Separately, it should be underlined, that the problems of Chiatura which are caused by open mining, and make the water undrinkable and the ecological environment disastrous.

In order to study the satisfaction with the urban life in the targeted mining cities, within the questionnaire, 10 questions were adapted from the "Eurobarometer – Quality of life in European cities" (2013 to 2016). For assessment, a 4-point scale was used (Table 5). In general, the residents of Janatas are relatively satisfied with the quality of life of the city, then comes Chiatura, while those living in Shurab are less satisfied, although in each city the different statements are evaluated dissimilarly.

As it was revealed by the employment structure of the local population, here again, one can see that the most of the residents of all targeted mining cities strongly disagree with the statement that in their cities it is easy to find a good job. 62.9% of residents living in Janatas, 41% of those living in Shurab and 32.5% of residents of Chiatura have difficulties to assess how integrated the foreigners are in their cities. This could be explained by the small number of foreigners in these cities as well as by the lack of communication with them. Those who could evaluate this statement in Shurab do not think that foreigners are integrated, unlike Chiatura, where half of the respondents indicate to the integration of foreigners in the city.

The respondents of all the cities have diverse opinions in regard to housing. Some of them strongly agree that in their cities, it is easy to find good housing at a reasonable price, while some of them strongly disagree. More than one-third of the local population in Shurab and Janatas do not evaluate the statement in regard to the efficiency of their city administration, while those who do evaluate it, are quite critical. In Chiatura 17% do not evaluate the statement, while the opinions of others are bipolar, either they strongly agree or strongly disagree.

Table 5: The average evaluation of the quality of life in mining cities (Please tell me whether you agree or not with each of these statements? (strongly agree – 4, somewhat agree – 3, somewhat disagree – 2 or strongly disagree – 1)

Settlement	In our city, it is easy to find a good job	Foreigners who live in our city are well integrated.	In our city, it is easy to find good housing at a reasonable price.	When you contact administrative services of our city, they help you efficiently	In our city, air pollution is a big problem	In our city noise is a big problem.	Our city is a clean city.	Our city spends its resources in a responsible way.	You are satisfied to live in the city	In the next five years, it will be more pleasant to live in our city	overall assessment
Chiatura	1.10	3.58	2.72	2.27	3.92	3.06	1.28	1.27	2.39	2.31	2.39
Janatas	1.36	2.71	2.34	1.84	3.17	2.29	2.21	2.49	3.40	3.39	2.52
Shurab	1.40	1.81	2.61	1.46	1.47	2.12	2.45	1.94	3.37	2.43	2.11

As it was affirmed before, air pollution is a big problem in Chiatura, which was confirmed by 96.1% of residents again. In Janatas 58.3% strongly agree with the statement that in the city air pollution is a big problem, while in Shurab 74% mention that this problem is not relevant to their city. Noise is a big problem for 68.9% of the Chiatura residents, while in the other two cities noise is less disturbing. 91.2% of people living in Chiatura do not think that the city is clean, while in the other two cities half of the population perceives their cities as clean. The question about the resource management of the cities is difficult to assess for almost half of the population in Janatas and Shurab. Other respondents from Janatas rather agree to the statement that the city spends its resources in a responsible way, while in Shurab and Chiatura residents are more sceptical regarding this issue.

Despite the fact that the residents indicate to the various urban problems, 76% of the residents of Shurab are satisfied to live in the city. Satisfaction with Janatas urban life is higher: 82.8% of city-dwellers agree to the statement. 52.3% of residents of Chiatura disagree with the statement that they are satisfied to live in Chiatura city. Satisfaction to live in the city is defined by the gender and education of the respondents. Female respondents are more content with their urban environment than male respondents. The education is in negative correlation with urban satisfaction: the higher education of the city-dwellers is less as they are pleased with the city life in general. Another independent variable defining satisfaction with urban life is the ancestral roots of the respondents in the city. Those residents whose ancestors lived in the locality are more satisfied with the city than those who moved from other places. This means that although the city infrastructure is a crucial element defining the attitudes of the population toward the living space, the emotional sentiments still work here.

The last question measuring the quality of urban life is the future prospect of the city. 80.1% of the population living in Janatas agree to the statement that in the next five years, it will be more pleasant to live in this city. A much lower enthusiasm in regard to the city's future is revealed in Chiatura and Shurab with 36.7% and 26%, respectively. How respondents evaluate the prospects of future city development depends on their educational background. Educated residents are less optimistic about the city's future. As in the previous question, the length of the family living in the locality has an effect. Those whose ancestors lived in the locality for longer, believe in the future development of their cities more than those whose families moved from other places.

2.8 Conclusion

Despite the fact that the economy of Shurab is the most underdeveloped, and households report the lowest income, its demographic picture is more promising, with no tendency of ageing and a larger number of children. The educational background of the population of the studied cities is similar to the countries' tendencies. In Chiatura the length of residence period can be traced, while in Shurab and Janatas more people resettled during Soviet times for economic reasons. Unemployment is a problem in all the cities but is much more prominent in Shurab. In Chiatura, the mining sector still keeps being the main employer of the residents while in other cities a variety of employment sectors can be observed.

Still, salary jobs do not fill the residents' household budget, pushing residents to refer to other sources of income (pensions, social assistance, informal social support, remittances, etc.). The fact that a large share of family expenditures is spent on food and other basic needs, again confirms the economic hardship of the population. The subjective evaluation of the residents of their families' financial situation is very sceptical and sometimes does not coincide with objective parameters: in Janatas, for instance, the mean household income is much higher than in Shurab, but its evaluation is as bad as in the Tajik mining city. In Chiatura, the mean household income is less than in Janatas, yet the subjective evaluation made by local residents is on average.

Migration is a more widespread surviving strategy in Shurab and Chiatura than in Janatas. In the Central Asian cities mainly men migrate, while sometimes women accompany them. In Chiatura, half of the migrants are independent female migrants providing household help unofficially in Greece, Italy, or Turkey. In Chiatura, the large share of migrants is middle aged, while in Central Asian mining cities, youth is more prominent. Migration is not to be equalled with brain drain as the educational background of migrants coincides with the data we have on the local population. The survey showed that being employed does not prevent out-migration decisions, since migrants report being in jobs before migrating out of the country. This largely confirms the fact that salaries are relatively low, which pushes household members to leave their locality for securing other household members' lives.

Most families own property in the mining cities via socialist-era state housing programmes. After that time, most could not improve the living spaces – as a need for renovation is reported by a majority of households. More acute is the problem of heating the entire flat/house, which is common to most families, while water supply problem is relevant to Shurab and Chiatura. The study shows that most of the families lack household items, and most saliently those which facilitate female family members' tasks.

Infrastructures have very much deteriorated after socialism. The studied mining cities showcase problems with roads, transport, city lighting or sewage system, not to mention other social and cultural facilities. Shurab is the least developed in this sense, as many amenities are not available at all.

Satisfaction with urban life strongly correlates with the advancement of cities' infrastructure, economic conditions of families and emotional attachment. This is why residents in Janatas are more satisfied with their city, and positively evaluate its future development prospects. By economy and city facilities' conditions, Chiatura is on the second position, with the popular evaluation being in accordance. Shurab, with the least developed urban space or economic opportunities, reveals the largest share of unsatisfied residents, who are also largely sceptical about future opportunities.

The results of the comparative survey show differences between the mining cities of Caucasus and Central Asia. Yet basically, they share the common fate of deterioration after Soviet times. Although mining remains the leading economic sector, it does not play a crucial role in the household economy, as the salaries are not filling the primary portion of budget. Educated residents are less optimistic about the future prospects and are less satisfied by their living environment. But the family history appears to play a role here. Several generations living in the same city makes them to be more loyal about their town, to be more content and estimate the opportunities in a more positive light.

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Figure 1: Jańatas Overview

Policy Brief: Living in Jańatas

Perspectives of Local Citizens on their life in a transitioning city

Data for this policy brief[1] was gathered through a survey in which 151 households were interviewed in November 2018. A detailed outline of the results is provided in the Adambussinova chapter in this volume.

Overview of Results

Demographics and Economics

- Since 1989, Jańatas lost more than half of its population (from 53,000 to 21,000 in 2016)
- 81% are ethnic Kazakhs, 14% Russians and 4.7% others (Ukrainians, Tatars, Kurds, Germans, Koreans, Kyrgyzs, Uzbeks)

Alternative Livelihood Strategies

- The majority of people are part of a debt-based economy and/or the give-and-take system of toy (celebrations to raise money and financially support each other).

Public Services

- Most public services are rated good, however, the responsiveness of public administration is criticized.
- Exception is waste management, which is rated to be poor by the respondents

Economic Overview

- Average income is 285 EUR/month
- All respondents rate their economic status as poor or very poor, people lack money for basic items, 76% have no savings at all
- 21% of people unemployed, 20% work in mining

[1] This policy brief, compiled by Mathias Polak, is based on the results of the research project "Mining Cities in Central Asia and the South Caucasus (MCCC)", which is financed by German Federal Ministry for Education and Research (BMBF) and jointly implemented by the Leibniz Institute for Regional Geography (IfL, Leipzig), the German-Kazakh University in Almaty, Khujand State University in Dushanbe, and the Tbilisi State University in Tbilisi.

Introduction

Jańatas is part of a special group of cities in the post-Soviet countries: it used to be a mono-city, i.e., a settlement, which depended (almost) entirely on the existence of one industrial enterprise. In the case of Jańatas, this was "Karatau", a mining company that produced phosphate. In the Soviet period, Karatau exploited around 50 phosphorus fields and produced 4 billion tons of ore, which was largely used for phosphorous fertilizer and materials in agricultural industry. As a mining city of strategic importance for the Soviet Union, Jańatas was privileged in terms of wage level and the provision with services and consumer items.

With the end of the Soviet Union, mining in Jańatas was considerably reduced and privatised at the same time. The number of employees in mining was reduced and hence the economic structure of the city changed fundamentally. In the memory of inhabitants, this leads to a dichotomic perception of their city's history:

- The socialist period when Jańatas was a privileged mono-city, and
- The post-socialist period when Jańatas struggled with decline and transitioned into something new.

Despite its privileged position during the Soviet period, the direct heritance of the mono-city history was economic dependency on one company and severe ecological consequences of mining. The most obvious indicator of the city's decline after the fall of the Soviet Union is the population development. Jańatas's population shrank from 53,000 to 21,000 between 1989 and 2016, hence by more than 50%.

However, since 2009, the population decline has stopped. The city is said to be in a transition period. This policy brief is presenting some answers on the question: "Transition to where?" Therefore, we first look at the economic situation of inhabitants, second at the livelihood strategies they are pursuing, and third at the perception of citizens of Jańatas on the public services.

Perception of Economic Situation

In Jańatas, mining is still a very important **sector of employment**. 21% of the working population are employed in the mining industry. Other key sectors of employment include the educational sector (18%), health care (10%), transportation (8%) and retail (7%). Hence the mining industry still plays a crucial role for employment in Jańatas. There is a clear division of employment models between men and women. While men mostly work in mining and transportation, most women work in the public sector (health care and educational services) as well as in retail. It was also reported that many people have an additional informal job (e.g., taxi driver) to make ends meet.

Figure 2: Damaged housing in Jańatas

The **average income** in Jańatas is 285 EUR/month. However, a considerable number of households – which often consist of 4 to 5 people – live on 150 to 300 EUR/month. A reason for this maybe the high rate of unemployment (21%). 64% of respondents assessed their living conditions worse than average or even hardly sufficient. While doing so, most of the respondents pointed out that they have a lack of money for the basic needs, such as food, clothes, and medical services, which are especially relevant for the elderly people. Correspondingly, more than three quarters of respondents (76%) do not have any savings.

Housing conditions: The vast majority of households in Jańatas own a flat (80%), while the ownership of land or a house is not common. The key problem people face with regard to their living conditions is that the flats need renovation (54%), which the inhabitants do not have the means. About one third of respondents' report that the flats are in damaged conditions (36%) or cannot be heated up properly (31%).

Alternative Livelihood Strategies

As mentioned before, a large number of people follow alternative livelihood strategies to either complement a formal employment or as a solution for unemployment. Apart from labour migration (especially to Russia and Western Kazakhstan), the most relevant ones seem to be the involvement in the debt-based economy and *toy* as a way to earn money and to support each other.

Debt-based economy: In Jańatas, 93 of 151 interviewed households were in debt. The debt economy is largely based on small, informal, personal networks of residents who know and trust each other. Local retailers and entrepreneurs keep debt-notebooks for different kinds of customers: friends, colleagues, reliable and unreliable clients. This practice developed in the economic turmoil of the 1990s, however, even today people in Jańatas continue practicing debt economy. Local traders and entrepreneurs continue keeping their debt-notebooks grouped by year, organization, and duration, which could be found in each shop and bazaar container in the city. Moreover, some clients also keep their own debt-notebooks in order to control their debts.

Toy: *Toy* is a form of life-cycle celebration by ethnic Kazakhs, such as wedding, birthday-parties, holidays, anniversaries, funerals and so on. In recent years, *toy* has been transformed from a simple family home-celebration into a large industry that involves a range of local small businesses, including car rental, dance groups, photography and video-making, tailoring, shops and restaurants, *toy* gifts and souvenirs, and beauty salons. Usually, people invite 200 to 500 people for a *toy*.

Figure 3: Limousine rented for toy celebrations

In order to recover all the costs and make a profit, different rates are charged for guests, ranging from 25 EUR for colleagues and friends to 250 EUR for close relatives. However, if one organizes a *toy,* he or she will pay back by obligingly participating in other *toys* in the future. Hence, *toy* is an economic activity in the form of a short- or long-term credit based on informal, personal networks, trust, and moral obligation. Furthermore, it is also an informal form of social security developed by the local population in order to help and support each other.

Retail: The strategy was developed in the form of 'wild trade' in front of the Bastille residential house began in the 1993 and, later, organized in the local bazaar. That period people first mostly sold their personal belongings, then some of them began to bring clothes, shoes, textiles, and other goods from the large bazaars placed in Kyrgyzstan (the *Dordoy*) and Almaty (the *Barakholka*). Nowadays, the local traders continue delivering a great variety of goods mostly from Bishkek and Shymkent sharing a taxi. Katya, a Kazakh female in her late fifties, describes her start in the retail business:

> *I was ashamed to start trading. My husband told me always: "Don't do that! I don't want to go to your bazaar too. Shame on you! You are like an Uzbek spekulyantka!" (...) In 1993, all my female friends started retailing. I had a small baby that time,*

however, I decided to start selling. I came to the bazaar with my baby. I sold clothes, while a baby carriage was always standing next to me. My friends brought goods for me from Almaty and Bishkek, they greatly helped me out that time because of my baby.

Perception of Public Services

Responses to the quality of public services in Jańatas. Generally, people rated the quality of different public services, such as transport and water supply as good. At the same time, the responsiveness of the local government was criticized as, and public administration was assessed as being inefficient. The public service assessed most critical is domestic waste disposal. Correspondingly, respondents strongly disagree with the statement that Jańatas is a clean city.

Figure 4: Waste disposal in Jańatas

Figure 5: Public playground in Jańatas

Another issue that was identified during the research is the lack of infrastructure for children to play. There are very little public playgrounds which lead to children playing in abandoned buildings. This may put them in danger as those places are not safe.

Summary and Recommendations

This policy brief provides a snapshot of perceptions of the citizens of Jańatas on the life in their city. A particular focus is put on alternative livelihood strategies to illustrate how people in Jańatas struggle to make ends meet. Though it was not in the focus of the survey, the research identified the development opportunities of children as a particular challenge for Jańatas. Interventions into the **development of suitable playgrounds combined with educational offers** would have a huge impact on the development of the city.

Figure 1: Chiatura overview

Policy Brief: Living in Chiatura

Perspectives of Local Citizens on their life in a transitioning city

Data for this policy brief[2] was gathered through a survey in which 283 households were interviewed in November 2018. A detailed outline of the results is provided in the Kartlelishvili chapter in this volume.

Overview of Results

Demographics and Economics

- 80% of inhabitants rate their economic status as medium or slightly above or below medium
- 28% of people unemployed, 29% work in mining
- Most public services are rated good or acceptable by the citizens.
- Exception is water supply, which is rated to be poor by the respondents
- Air pollution is assessed as a big problem in Chiatura by nearly all respondents.
- General cleanliness and noise pollution are named as further major environmental challenges

Public Services and the Environment

- Since 1990, Chiatura lost nearly half of its population (from 69,000 to 39,000)
- Inhabitants are 99% ethnic Georgians, 65% indicate their ancestors have lived in Chiatura
- Average income is 265 EUR/month (below national average)

[2] This policy brief, compiled by Mathias Polak, is based on the results of the research project "Mining Cities in Central Asia and the South Caucasus (MCCC)", which is financed by German Federal Ministry for Education and Research (BMBF) and jointly implemented by the Leibniz Institute for Regional Geography (IfL, Leipzig), the German-Kazakh University in Almaty, Khujand State University in Dushanbe, and the Tbilisi State University in Tbilisi.

Introduction

Chiatura is part of a special group of cities in the post-Soviet countries: it used to be a mono-city, i.e., a settlement, which depended (almost) entirely on the existence of once industrial enterprise. In the case of Chiatura, this is "Chiaturmanganum", a mining and metallurgical company that produces manganese. As a mining city of strategic importance for the Soviet Union, Chiatura was privileged in terms of wage level and the provision with services and consumer items.

With the end of the Soviet Union, mining, and metallurgic production in Chiatura was considerably reduced and transformed into a private enterprise. The number of employees in mining was reduced and hence the economic structure of the city changed fundamentally. In the memory of inhabitants, this leads to a dichotomic perception of their city's history:

- The socialist period when Chiatura was a privileged mono-city, and
- The post-socialist period when Chiatura struggled with decline and transitioned into something new.

Despite its privileged position during the Soviet period, the direct heritance of the mono-city history was economic dependency on one company and severe ecological consequences of mining. The most obvious indicator of the city's decline after the fall of the Soviet Union is the population development. Chiatura's population shrank from 68,000 to 39,000 between 1989 and 2018, hence by nearly 50%.

However, since 2009, the population decline has reduced. The city is said to be in a transition period. This policy brief is presenting some answers on the question: "*Transition to where*?" Therefore, we first look at the economic situation of inhabitants, second at the perception of citizens on the public services provided to them, and third at people's perception of the environmental situation in Chiatura.

Perception of Economic Situation

In Chiatura, mining is still the most important **sector of employment**. 29% of the working population are employed in the mining industry. Other key sectors of employment include education (14%), construction (8%), other services (7%), health care (6%) and retail trade (5%). Hence the mining industry still plays a dominant role for employment in Chiatura. Citizens consider it very difficult to find a job in Chiatura as the mining industry looks for a very specialized workforce and the access to positions in the public service is highly restricted.

Figure 2: House in need of renovation

Despite this relatively large share of highly qualified industrial jobs, the **average income** in Chiatura is below the Georgian average with 265 EUR per month. A reason for this may be the huge unemployment. 39% of respondents are said to have no income at all. Correspondingly, only 13% of respondents are said to have any **savings**, while 87% have no savings at all. The savings that are made are mainly for the children and/or further education. Overall, **the economic self-assessment of inhabitants is medium**; on a scale of -3 to 3, the overwhelming majority of 80% rated their status as either -1,0 or 1, i.e., nor bad, nor good.

The key services people in Chiatura cannot afford are related to leisure. 74% indicated that they would want to spend more money on leisure but cannot afford **housing conditions**: The majority of households in Chiatura own either a flat (65%) or a house

(45%), or both. A majority of respondents said to have problems with water supply (64%) or heating (54%) of their house/flat. 67% report that they cannot afford necessary renovations of their property.

Alternative livelihood strategies

Due to the decline of Chiatura's mining industry, inhabitants have started very different undertakings to ensure their livelihood. This research identified some examples that may be worthwhile to be further studied and potentially duplicated in the future.

Almost 60% of the inhabitants of Chiatura own a plot of land, mainly in the surrounding villages. Many produce vegetables for their own consumption, but some developed into professional businesses. People like George:

George is 24 years old and after the death of his father, he runs a flower farm. He is a student, and as he said, he is a little magnate of the village, because when someone sells land he buys it. Also, he owns the only shop in the village. At first, he decided to make a farm on 3 acres of land, then he slowly expanded, he brings various varieties from abroad, as well as make hybrid varieties. In addition to flowers, he has dwarf and ornamental plants on the farm. The farm employs 3 people at a time, and a few more are needed seasonally.

Figure 3: Cable cars as tourist attraction

The farm supplies flowers to the capital and other big cities' flower markets. George plans to expand his business in the field of agro tourism.

Other alternative livelihood strategies are fish farms, particularly for trout, breeding turkeys and planting tea.

A potential future strategy, which is not yet sufficiently exploited, is tourism. Due to its Soviet architecture, scenic landscape and the picturesque cable cars that criss-cross the city, Chiatura is already interesting for specialized tourists. Many respondents expressed hope that tourisms can be further developed in the future and provide additional income for the city.

Perception of Public Services

Generally, people of Chiatura appreciate the public services provided to them by the municipality. Especially the inner-city waste management, the quality of street lighting, the quality of the orphanage and the senior citizen home were rated as good or very good. Equally positive were the ratings of the quality of kindergartens and schools. Furthermore, inner-city transport was also considered good by the citizens.

Figure 4: Inner-city transport in Chiatura

The major concern of inhabitants with regard to public services is the water supply. It is rated as poor to very poor and is also cited as a key concern regarding the housing situation as 64% of respondents said to struggle with provision of water services to their home. By the end of 2018, water supply to

Chiatura was intermittent (i.e., water is provided for a couple of hours per day) and water quality was poor. This was due to a deterioration of infrastructure after the collapse of the mining industry in 1990.

Figure 5: Deterioration of infrastructure

Perception of Ecology

Open pit mining – as it was practiced and is still practiced today in Chiatura – has huge effects on the environment. Not only are large parts of the environment doomed to be transformed into pits, but also the remaining parts of the city suffer from a number of challenges.

The biggest problem for the inhabitants is air pollution. Nearly all respondents agree to the statement that "Air pollution is a big problem in our city." Also, the city's general cleanliness is perceived as a major problem by the respondents. Very few of them agree to the statement "Our city is a clean city". Noise pollution is reported to be the third major environmental challenge for the citizens. However, no scientific data on noise pollution are available.

Figure 6: Problematic cleanliness in urban infrastructure

Summary and Recommendations

This policy brief provides a snapshot of perceptions of the citizens of Chiatura on the life in their city. It demonstrates the citizens struggle with some of the heritage of Chiatura being a mono-city, notably the economic dependency on one company, which still exists, and the ecological consequences of open pit mining. However, it also shows promising initiatives of alternative livelihood strategies and a general content with the provision of public services. The research identified the **tourism industry as a possible element for future economic development** that may be worth to be fostered by local authorities.

Figure 1: Overview of Shurab; photo by Rano Turaeva

Policy Brief: Living in Shurab

Perspectives of local citizens on their life in a transitioning city

Data for this policy brief[3] was gathered through a survey in which about 100 households were interviewed in November 2018. A detailed outline of the results is provided in the Schweikart/ Olimov chapter in this volume.

Overview of Results

Demographics and Economics

- Since 1990, Shurab lost half of its population (from 8,400 to 4,000)
- Inhabitants are 96% ethnic Tajik, 88% indicate their ancestors have lived elsewhere
- Average income is 129 EUR/month (close to national average)
- All respondents rate their economic status as very bad or bad
- 59% of people unemployed, 24% of working population work in mining, 34% in public sector

Public Services and Livelihood Strategies

- Water supply and central heating are rated as very poor by the citizens.
- Responsiveness of local government is rated to be very weak by the respondents.
- Outmigration is the key alternative livelihood strategy in Shurab.
- Subsistence farming is also relevant, but limited by availability of irrigation water

[3] This policy brief, compiled by Mathias Polak, is based on the results of the research project "Mining Cities in Central Asia and the South Caucasus (MCCC)", which is financed by German Federal Ministry for Education and Research (BMBF) and jointly implemented by the Leibniz Institute for Regional Geography (IfL, Leipzig), the German-Kazakh University in Almaty, Khujand State University in Dushanbe, and the Tbilisi State University in Tbilisi.

Introduction

Shurab is part of a special group of cities in the post-Soviet countries: it used to be a mono-city, i.e., a settlement, which depended (almost) entirely on the existence of one particular economic activity, in most cases the exploitation of natural resources. In the case of Shurab, this economic activity was coal mining. As a mining city of strategic importance for the Soviet Union, Shurab was privileged in terms of wage level and the provision with services and consumer items. As one inhabitant put it: "Shurab was a paradise corner in Tajikistan".

Figure 2: Landscape Overview; photo by Rano Turaeva

With the end of the Soviet Union, coal mining in Shurab was considerably reduced. From 1991 to 2000, coal production decreased from 500,000 tons to 20,000 tons per year. While in the Soviet period, about 3,000 people worked in coal mining, the number dwindled to a mere 400 in 2012. Hence the economic structure of the city changed fundamentally. In the memory of inhabitants, this leads to a dichotomic perception of their city's history:

- The socialist period when Shurab was a privileged mono-city, and
- The post-socialist period when Shurab struggled with decline and transitioned into something new.

Despite its privileged position during the Soviet period, the direct inheritance of the mono-city history was economic dependency on one company and severe ecological consequences of mining. The most obvious indicator of the city's decline after the fall of the Soviet Union is the population development. Shurab's population halved from 8,400 to 4,000 between 1991 and the early 2000s.

However, over the last 15 years, population numbers stabilized at a low level. The city is said to be in a transition period. This policy brief is presenting some answers on the question: "*Transition to where*?" Therefore, we first look at the water supply in Shurab, second at the perception of citizens on the public services provided to them, and third at people's perception of their economic situation.

Water Supply in Shurab

The most striking consequence of Shurab's shrinking is the breakdown of public water supply. Shurab's drinking water comes from the "Shurab-Vorukh" water pipeline, which was constructed in 1969. The pipeline, starting in the Tajik exclave of Vorukh in Kyrgyzstan before reaching the settlements of Khudjai Alo and Shurab on the Tajik side of the border. Out its 32 km, 17km pass through Kyrgyz territory, and nearly half of the pipeline course passes densely populated areas. As there is not bilateral agreement on operation and maintenance of the pipeline, rehabilitation works are not sufficiently undertaken. It is estimated that 70% of the course of the pipeline are damaged and major amounts of water are lost. Water theft of residents along the pipeline are an additional problem, contributing to the poor water supply of Shurab. Therefore, **water supply is the key challenge** for inhabitants of the city.

Figure 3: Streetview in Shurab; photo by Rano Turaeva

Perception of Public Services

Not surprisingly, **residents of Shurab assess all public services that are provided through centralized infrastructure as very poor**. Water supply and central heating are rated extremely bad (1 on a scale from 1 to 5), sewerage and domestic waste management are rated bad (1.8 and 1.9 respectively). This emphasises that the local government is not able to provide those services any more to the population.

Respondents also indicated that they perceive the **responsiveness of local administration** as a key problem. On a scale from one to four, respondents rated the responsiveness at 1.46, hence at the lower end. However, cultural facilities as well as health care facilities are assessed as good to very good by respondents.

Perception of Economic Situation

In Shurab, mining is still a very relevant **sector of employment**. 24% of the working population are employed in the mining industry. The second key sectors of employment is the public sector, especially education (34%) and health care (9%). Job opportunities outside of the public sector or mining are very limited in Shurab.

The **average income** in Shurab was found to be 129 EUR/month and therefore close to the national average of Tajikistan. Correspondingly, 90% of respondents assess their **economic status** as very bad (-3 on a scale from -3 to +3); the remaining 10% assess it as bad (-2). Many respondents cannot afford items and services to cater for their basic needs, such as drinking water (58% cannot afford), health care (38%), transport (35%) and rent (34%).

Housing conditions: The majority of households in Shurab own either a flat (46%) or a house (38%), or both. Nearly all households said to have problems with water supply (93%) or heating (75%) of their house/flat. 58% report that they cannot afford necessary renovations of their property.

Figure 4: Private House in Shurab; photo by Rano Turaeva

Alternative livelihood strategies: Due to the decline of Shurab's mining industry, inhabitants have started to explore alternative strategies to ensure their livelihood.

The most relevant is **subsistence farming**. However, the lack of water in Shurab is not only a problem for drinking water supply, but also for irrigation. During the Soviet period, irrigation infrastructure was not essential for the mining town. Today, this infrastructure is missing, which results in poorer living conditions in Shurab than in other settlements in the area. This has also contributed to a massive migration of inhabitants from Shurab to other parts of Tajikistan or other countries.

Summary and Recommendations

This policy brief provides a snapshot of perceptions of the citizens of Shurab on the life in their city. It demonstrates that citizens struggle with some of the heritage of Shurab being a mono-city, notably the **oversized water network and network for central heating**, which could not be sustained after the end of the Soviet Union. The lack of basic services and formal jobs as well as the unresponsiveness of local administration makes it difficult for inhabitants to develop satisfying livelihood strategies. Therefore, **migration** to other parts of Tajikistan or to other countries was the **key livelihood strategy** of inhabitants.

3 Survival Strategies of Local Residents in mono-industrial Jańatas, Kazakhstan

Zarina Adambussinova

3.1 Instead of an Introduction: Jańatas as a Soviet *Monogorod*[4]

In the Kazakh language, the word *jańatas* means 'new stone', which refers to newly-found phosphorite deposits opened in the Karatau mountains in Southern Kazakhstan in the 1960s. The city was established in 1964 as a small-scale mining settlement with 20 to 25 households in the Jambyl region of the former Kazakh SSR (Figure 1). In a very short period of time, already on 25 June 1969, Jańatas was granted town status. Here, worth noting that a considerable part of mono-industrial urban areas in Central Asia were founded mostly throughout the second part of the 20th century that is known in history as the period of full-scale building of communism (Harris 1945). In different parts of the former Soviet Union, these processes were predominately associated with the rollout of industrialization and urbanization.

Figure 1: Map of Kazakhstan in the context of Central Asia

The city and its population then grew rapidly until the 1990s. The very first residential houses and industrial buildings were mostly built by persons on suspended prison sentences: initially, a prison was the only institution that existed in the region. Later on, most of the city districts were developed with the help of two house-building plants from large cities of the country, primarily Alma-Ata and Shymkent. During the Soviet period, there were several major local enterprises in Jańatas, such as *Kok-Jon*, *Gimmelfarbskoe*, and *Kok-Su* mining sites, an industrial area (usually called *promploshchadka* by the locals), a maintenance plant, boiler stations, a training centre, a bread-baking factory, regional power stations, hospital and so forth. All these objects were arranged around the phosphate industry and used to be united under the umbrella of a large state-

[4] From Russian *monogorod* means a mono-industrial town or city.

Note on Transliteration: For Kazakh words, I used a new version of the Latin-based Kazakh alphabet developed in 2017. Transliterations from Russian Cyrillic are based on the Library of Congress Transliteration System.

run mining company *Karatau*. In the *Karatau* deposit, around 50 phosphorus minefields were found and 4 billion tons of ore were explored that period.[5] They were largely used for phosphorous fertilizer and as a primary matter for the agricultural industry of the Union.

All ambitious Soviet economic projects in Central Asia usually went in line with social engineering ambitions (Sarsembayev 1999), mostly embedded in the form of massive migration flows of workforce from the European parts of the Union to other regions. In general, these Party-run activities have indicated not only the direction of future growth of numerous mono-cities (and -towns) throughout the Party-led state but also crucially shaped their social and cultural profile.

As a newly-built city, Jańatas had enormously attracted both a number of gifted engineers and managers from Moscow such as A. Shein, I. Mashkara, B. Gimmelfarb, A. Nedogon – and various workers without any professional qualification, who commonly came through a *Komsomol* voucher[6] mainly from Russia, Ukraine and neighbouring Kyrgyzstan. Thus, the population significantly increased from 11,480 in 1970 to 53,401 in 1989 (Yashkov et al. 2016). Some of my informants during the interviews, who moved to Jańatas with their families throughout the Soviet period, nostalgically recollected that they used to call the city as *Jańa-Paris* (New Paris), referring to their personal happiness and a bright future with a constant and prosperous growth of the city. Most newcomers could easily receive either a large apartment for the whole family in a newly-built residential house or a piece of land for building an own house after moving to the city. In addition, all residents of Soviet Jańatas received a salary at the rate of 100%+60%,[7] while some individuals, particularly those who were directly involved into the mining industry, used to have an increased salary at a rate of 100%+80%.

Jańatas was not the mono-city that offered a particular range of benefits of living to its residents during the Soviet period. In fact, such high standards of living could be found in each Soviet mono-industrial locality. Nasritdinov (et al. 2010, 2012, 2015) distinguishes the following features of Soviet mono-industrial cities: First of all, most of them were usually formed in geographically distant areas on the periphery of the Union (and of a particular republic as well). Secondly, perhaps most importantly, mono-cities were heavily supported by a considerable number of subsidies directly from Moscow known as 'Moscow provision' (*byli na moskovskom obespechenii*). Finally, a great number of highly qualified and skilled labours from other (mostly European) parts of the country were sent by the Party-led government through various *Komsomol* activities and practices to develop these places. Nasritdinov equally underlines that a special significance given to such urban areas had crucially shaped and formed a certain way of a local everyday life, or better to say, the distinct way of life: When a state-run mono-functional industry used to provide people with literally everything. As described above, individuals used to enjoy a number of enormous benefits from living and working in such places. This included higher salaries, better conditions for newcomers at finding permanent accommodation (with running water and central heating), and the ease obtain land for building own house to good provision with all needed facilities and an advanced city infrastructure developed within a very short period of time. All these had greatly enabled the local population to lead a decent and, at the same time, extremely predictable everyday life during the Soviet period.

[5] The information is taken from the official page of LLP *Kazphosphate*, a legal successor of the former Soviet town-forming enterprise. *Karatau*: http://www.kazphosphate.kz/en/stru_podr/gpkk/gpkk_history.php.

[6] *Kommunisticheskii Sojuz Molodezhi* (shortly *Komsomol*) was the youth organization of the Communist party

[7] In the context, 100% refers to average salary in the Soviet Union.

3.2 Theoretical and Methodological Considerations

Having shown a brief history of Jańatas as a Soviet mono-industrial city, I would like now to turn to the theoretical basis and methodology of this study. The aim of this study was to analyse some changes of the conduct of everyday life from a bottom-up perspective in Jańatas with a major focus on different survival strategies developed by remained inhabitants for economic survival in the post-Soviet period. Before I move to informal economic practices, I would first like to clarify my understanding of the notion of survival strategy. In this regard, I heavily refer to the views of Fontaine and Schlumbohm (2000) who explain the concept of *survival strategies* as a complex phenomenon where the notion of *survival* is not necessarily restricted to physical subsistence, it is instead "always shaped by perception and self-perception, i.e., socially constructed" (ibid., p. 10). What is also important to bear in mind that the diversity of strategies, which individuals, families, or households might develop, largely depends on different types of *uncertainty* they might face in their surroundings (ibid., p.12). Dealing with survival strategies, Wallace (2002) elaborates the notion of *household strategies,* which she considers as "a concept, a method of analysis and a unit of analysis". This approach helps to understand economic behaviour on a micro-social level and social changes in different societies (ibid., p.8). She also argues that in different countries and societies household strategies might take different forms and types depending on a range of factors, such as a type of economy, political and cultural contexts.

One of the most insightful research findings of the present study is the phenomenon of so-called *debt economy* that appears as a widespread economic activity of local households in contemporary Jańatas. Informality and informal economic practices in different post-Soviet countries were widely discussed in such accounts as Ledeneva (1998, 2001), Humphrey (2000a, 2000b), Nazpary (2002), Dittrich and Schrader (2015), and Polese and Morris (2015). In many cases, informality is described as a particular kind of socio-economic relations which include the elements of 'connections' or networking (ibid.) or *blat* (Ledeneva 1998), lawlessness (Nazpary 2002), informal unwritten rules, weakness of institutions (Ledeneva 1998, 2001) and trust (Humphrey 2000a, 2000b). To understand and explain this notion, I refer to anthropologically grounded research by Humphrey (2000a, 2000b) and Ledeneva (1998, 2001). Both scholars have systematically investigated informality and non-institutionalised economic practices, including the notion of *barter economy* and the phenomenon of *blat*, in different localities of post-Soviet Russia. Humphrey (2000a) underlines that by analysing these practices, it is essential to take into consideration social, economic, and cultural contexts in which informal economic practices can be formed and successfully operate. Based on their views, I suggest considering the debt economy as informal practice in the form of a deal or 'trade partnership' between individuals to obtain goods and services for a short or long term based on various debt and barter chains and trust, creating certain socio-economic relations between members within an informal network.

Speaking about the methodological part of the study, the field research in Jańatas included two major stages: firstly, the collection of quantitative data through household survey and, secondly, interviews with residents and representatives of local city authorities (*akimat*) and mining companies. At the initial stage of the field research, I predominantly focused on collecting quantitative data and establishing very first contacts with residents. The survey process gave me a great opportunity to gain valuable insights into residents' life and issues they have to face daily as well as to personally assess current living conditions. It also helped me to identify the most interesting cases of economic survival strategies developed by the remained residents to make a living for in-depth study during the qualitative research.

The survey questionnaire[8] included three sets of mainly standardized questions related to such areas as general information on household, its economic activities and, finally, questions on the

[8] The initial questionnaire in English was translated into Kazakh and Russian and was pre-tested in Tekeli, which is a small mining city in Almaty region, on 13th October 2018.

quality of the city life. In total, we gathered 151 survey questionnaires that were conducted in the form of a face-to-face interview with one of the household members either in Kazakh or Russian. To gain deeper insights into the people's economy, I additionally conducted life-story interviews with different citizens both in Kazakh and Russian. In some cases, during the interviews my first informants introduced me to their acquaintances and colleagues, who later also became my informants. Most of them moved to Jańatas during the Soviet period and used to work in different areas not only in the mining sector but also closely connected to the single-forming enterprise – a state-run company *Karatau*. Therefore, they provided me with valuable insights into the life of Soviet Jańatas, the crisis in the 1990s and, specifically, how the inhabitants survived that period. (In the preparation of the life-story interviews, the range of ethical matters, especially the trust-related issues, were taken into account.) In addition, I applied the techniques of participant observation, spending a great amount of time in the local bazaar; that is seen as the heart of the city life.

3.3 The Socio-Economic Profile of present-day Jańatas

Before discussing the local survival strategies, I would like first to illustrate the socio-economic profile of contemporary Jańatas largely based on the quantitative data derived from the household survey. So, the city population nowadays is estimated at 21,444 people according to official statistics (2016) due to a dramatic out-migration of non-Kazakhs – primarily-Slavs and Germans – throughout the 1990s and 2000s. Over the recent decade, however, there is a trend of growing interregional in-migration of young ethnic Kazakhs. These move to Jańatas mostly from neighbouring rural areas within the Jambyl region of Southern Kazakhstan.[9]

Our household survey generally involved 568 household members, including 302 female and 266 male respondents. Two most widespread types of households were identified during the survey. The first type are the two-generational households, which were mostly represented by parents with their children or grandparents with their grandchildren (in case of labour migration). The second type included the one-generational households, which largely consisted of elderly retired people only. Further, the ethnic composition of household members was following: 81.3% constituted Kazakhs, 14.1% were Russians and the remaining 4.7% were represented by Tatars, Uzbeks, Ukrainians, Kurds, Kyrgyz, and Germans. A majority of studied households were ethnically homogenous, while only a small number of households were ethnically mixed, such as Russian-Kazakh, Russian-Tatar, Tatar-Uzbek, Russian-Kurdish. Speaking about the age distribution of households, the majority of household members were people of the working age, from 30 to 60 years old (39.4%). Importantly, more than one quarter of household members (25.5%) was represented by young generation – people in the age group from 6 to 17 years old. They were mostly household members of ethnic Kazakh families, which recently moved to Jańatas from neighbouring villages of the region.

The second part of the survey was dedicated to the examination of economic activities of households. Regarding household incomes, a considerable part of households (36.4%) earned in the range from 150 EUR to 300 EUR per month. However, it is worth mentioning here that most households consist of more than 4 to 5 persons (36.4%). Therefore, in many cases the reported incomes are insufficient to feed a whole family. Further, most household members (28.8%) worked in the state sector, such as educational and medical services, while only 20.1% of household members were involved in the mining sector. More specifically, the male respondents were largely employed in the private sector in mining, transport, construction, and trade; while female respondents more often had jobs in the state sector and in retail. The qualitative research has also

[9] See more on the issue in: Jaxylykov, S (2017). 'The Northern region and the southern people: Migration policies and patterns in Kazakhstan' *Cappapers 184.* Central Asia Fellowship Series.

showed that residents, in many cases, had more than one job: the second job was regularly taxi-driving or seasonal work for male respondents and retail in local bazaar for both genders.

Speaking about employment today, the mining sector of the city consists of two large private mining enterprises: LLP *Kazphosphate*, more precisely *Karatau* Mining Processing Complex, and LLP *EuroChem-Karatau.* The former is a legal successor of the Soviet-era town-forming enterprise *Karatau*, while the latter one has been operating in Jańatas since 2013 mainly in two phosphorite reserves: the *Kok-Jon* and the *Gimmelfarbskoe*. Both mining enterprises concentrate on the production of phosphate powder, which is used for producing fertilizer for the agricultural industry, domestically and internationally. Due to automatization of the production processes nowadays there are only 68 individuals out of the local population (Interview with a representative of the Euro-Chem-Karatau in Jańatas 2018), including various subcontractors, who work for LLP *Euro-Chem-Karatau*. (During the survey, most young Kazakh-speaking male respondents expressed the view that they would have no chance of working for LLP *EuroChem-Karatau* as they do not speak Russian or have no professional qualification in the area.) With regard to the LLP *Kazphosphate,* around 1,450 people from Jańatas worked there in 2017. In general, only 7% of the whole city population were employed in the local mining industry that used to play the leading role in shaping and forming Jańatas in the Soviet period but not anymore.

In the second part of the survey, we were also interested in how our respondents would assess the economic status of their household, asking them about the extent to which their households could cover the expenses for making a living. The majority of respondents (63.6%) assessed their living conditions worse than average or even hardly sufficient. Most of the respondents pointed out that they lacked money for the basic needs, such as food, clothes, and medical services (especially relevant for elderly people). We also asked the individuals if they had an opportunity to save up money and for what purposes and needs exactly. A considerable part of respondents (76.2%) gave a negative answer to these questions, pointing out that they simply did not have extra money in the household budget. Those respondents who answered positively mostly save up for children, their education and marriage, while several respondents also pointed out various family occasion.

Perhaps the most insightful research finding that came out of the survey was the fact that a vast majority of the respondents had to go into debt in order to maintain their living standards: to take food, clothes and other things needed for household. Almost everyone in the city we talked to, used to live, and continue living in debt for years. The next research finding was the phenomenon of *toy*[10] that was referred to by the respondents during the survey as a local entertainment activity (by 48 respondents). While doing so, people usually spend from 50 EUR to 150 EUR (in some rare cases even more) by attending a *toy* arranged in Jańatas. Both informal economic practices developed by the local population of Jańatas during the post-Soviet period to cope with challenges of a new reality could be viewed as local survival strategies. I will discuss both practices more in detail with a major focus on the debt economy in the second part of the paper. Before I will do that, I would like also to briefly introduce the state plans for the city development of Jańatas.

3.4 State Program of Regional Development for 2012 to 2020

On 16th to 17th December 2011, during the celebration of the country's Independence Day, a number of public protests and clashes between residents and police took place in the oil-producing mono-town Jańaózen in Western Kazakhstan. Previously, in May, oil workers went on strike to demand labour rights for better pay and working conditions. According to official statistics, at least 13 people were killed and around 100 wounded by police during the riots, however, the actual number still remains unknown. Remarkably, the event attracted governmental attention to the socio-economic situation and different *monogorod*-related issues and prompted officials to

[10] A Kazakh word used to define various kinds of celebration.

take specific actions in that regard. As a result, a large state-run initiative devoted to the development of mono-industrial urban localities in the country was generated and launched in May 2012.

As part of the planned and centralized Soviet economy, numerous mono-industrial areas of various types and kinds have successfully operated in different parts throughout the republic. Within the Soviet Union, the Kazakh SSR was considered as a major producer of coal, oil and natural gas, iron ore, copper, phosphates, lead, zinc mines, and high-grade chromium deposits (Newton 1976, p.89).[11] After the collapse of the Union, most industries were frozen and/or completely closed throughout the 1990s, while many former Soviet miners and factories were privatized. According to the State Program of Regional Development for 2012 to 2020 (SPRD), today there are officially 27 mono-cities (out of 87 cities in the country) located in 10 different regions of the country. In addition, 20 localities out of them are mining cities, including Jańatas.[12] In 2009, the number of *monogorod* population is estimated at around 16.8% of the whole urban population of the country, according to the SPRD. Within the Program, all mono-industrial cities and towns were grouped into three separate categories by population number: a) small-sized towns below 50,000 inhabitants; b) medium-sized cities between 50,000-100,000 inhabitants; c) four large cities with over 100,000 inhabitants.

The SPRD aims at dealing with regional issues and transforming Soviet-era mono-functional towns, considered as the legacies of the Communist past, into competitive modern-day cities, including their economic integration and diversification. The main goals and objectives of the Program are formulated in the form of four main directions which specifically focus on: (a) making the size of the mono-city proportionate to the size of the population; (b) diversification of the economy with more small and medium enterprises (SMEs); (c) increase of labour mobility in mono-cities (through job placement programs and/or job transfer programs); (d) attracting infrastructural development (SPRD). During the initial years of the implementation of the Program, the state-run initiative was largely focused on the following key objectives, that is to demolish vacant buildings, to renovate and build infrastructural objects and, finally, to support SMEs.

Figure 2: The residential houses of the 1st city district repaired within the state programme, November 2018

Looking at the implementation of the Program in Jańatas, since 2013, around 110 former residential houses and abandoned industrial buildings were completely demolished and 6 buildings (in the 1st city district) were renovated. In addition, a range of new objects were newly built in the city, such as a new mosque in the city centre, and a large park named after the First President of

[11] Nowadays, the mining industry made up around 4% of Kazakhstan's GDP in 2013 (RFCA Rating, 2015). In the same period, the rate of the mining industry in the country has gradually declined from 16% in 2004 to 9% while it remained stable for the last years (RFCA Rating, 2015).

[12] According to SPRD, among the mono-industrial cities in Kazakhstan the town of Jańatas, along with Arqalyq, were defined as cities with a dire socio-economic situation in accordance of the state-run program for regional development of mono-cities and -towns.

Kazakhstan. Main streets received renewed street lighting. However, referring to the survey results, the third part which was devoted to the assessment of the quality of city life has shown that the city lighting in other city parts, especially in the remote areas full of private houses, the deterioration of heating and water networks, the sewage system, and the domestic waste management still remain central problems of contemporary city infrastructures.

Perhaps one of the significant outcomes of the Program in Jańatas was the intense cooperation and a large amount of investments – 20 million USD – from the LLP *EuroChem* (LLP *EuroChem-Karatau*), a Swiss agrochemical company with the main production facilities in Russia. The annual output of phosphate powder production of the enterprise amounted to around 640,000 tons (Yashkov et al. 2016). By 2020, LLP *EuroChem-Karatau* plans to build a large complex for the production of mineral fertilizer in the region, promising to create new employment opportunities for the local population. In 2016, the enterprise presented to local authorities a so-called master plan of Jańatas generated by a Russian design company from Sankt-Petersburg, funded by LLP *EuroChem.* The project is seen as a detailed plan for urban development of both the old and new city districts in Jańatas based on a range of geographical, social and architectural researches. Nowadays, already two secondary schools, a state kindergarten and a public library were entirely renovated and, moreover, a new sport centre was built as part of the project implementation. According to the ambitious ideas of the master plan, several objects will soon be emerging in Jańatas, including a new large *Vostochnyi* bazaar, a swimming pool, and a large residential complex *Tri Bogatyrya*.

3.5 Survival Strategies in post-Soviet Jańatas

Most survival strategies, which were identified in Jańatas at the time of my stay, emerged during the political and economic crisis in the 1990s. They are mostly related to the economic dimension of the conduct of everyday life by remaining residents. Referring to Fontaine and Schlumbohm (2000), the first survival strategies were developed as a response to an extreme poverty and the physical survival in the 1990s. However, I argue that the contemporary strategies are caused by other types and forms of uncertainty. These are particularly: a general insecurity in future (especially, compared with previous life during the Soviet period), unemployment, political and economic instability, and distrust to local authorities. Some local economic strategies are being practiced by few individuals, while others are still actively employed by a majority of the population, regardless of their incomes and status.

Out-migration (and/or the return to so-called "historical homelands") was the most widespread survival strategy for a great number of individuals, primarily non-Kazakh citizens, at the very beginning of the crisis in the 1990s. This dominant trend occurred not only in Jańatas but also in the whole country. It was largely caused by the political uncertainty, rather than driven by the economic reasons. Meanwhile, the character of migration in the country has fundamentally changed. Along with interregional in-migration, labour migration to West and South Kazakhstan (primarily Atyrau, Shymkent, Taraz) and Russia has become one of the survival strategies of the remaining residents, especially for male individuals in the working age.

Another popular form of economic survival for the citizens still remains the *dacha*, a summer house with an own garden. Similar to the 1990s, when shortages in power and water supply were commonplace, people tried to move to *dachi* located in remote parts of the city, leaving their apartments in residential houses and buying or even bartering a *dacha*. For a number of individuals, especially non-Kazakhs, to have a *dacha* with an own garden allows them not only to make ends meet, but also to generate a very modest profit by offering for sale part of the harvest or home-

made food. Every Saturday morning, the administration of the local bazaar arranges a large agricultural fair on its territory, where *dachniki*[13] run their small businesses.

Figure 3: Ortalıq Bazar in Jańatas

Further, the retail also remains another much-practiced form of economic survival among local households in post-Soviet Jańatas. Initially, it started as 'wild trade' in front of the *Bastille* residential house in 1993 and, later on, turned into the local bazaar. Throughout the period of 'wild capitalism' (Nazpary 2002), people mostly sold their personal belongings, ranging from clothes, shoes and food to dishes, toys, souvenirs, and furniture. Gradually, some residents started bringing new goods – clothes, textiles, shoes – from larger bazaars, such as the *Dordoy* in Kyrgyzstan and the *Barakholka* in Almaty. Today, most local traders continue delivering a great variety of goods mostly from Bishkek (Kyrgyzstan) and Shymkent, often taking a shared taxi by a small group of local traders. For example, Katya, a Kazakh female in her late 50s, who had worked more than 20 years as a head nurse in the local hospital, today runs her own trade container in the local bazaar. During the interview, she remembered how she started trading:

> *I was ashamed to start trading. My husband told me always: "Don't do that! I don't want to go to your bazaar too. Shame on you! You are like an Uzbek spekulyantka![14]" (...) In 1993, all my female friends started retailing. I had a small baby at that time, however, I decided to start selling. I came to bazaar with my baby. I sold clothes, while a baby carriage was always standing next to me. My friends brought goods for me from Almaty and Bishkek, they greatly helped me at that time because of my baby. (Interview, November 2018).*

As both the quantitative and qualitative data have shown, *toy* celebrations might be considered as one of the local survival strategies, which, in comparison with others, developed only recently. The word *toy* defines a form of life-cycle celebration by ethnic Kazakhs, such as wedding, birthday parties, holidays, anniversaries, funerals and so on. There are four large restaurants in this comparatively small city, exclusively devoted to the organisation of *toy* of different kinds and sizes. They provide a set of various services required for contemporary *toy* arrangement. More recently, *toy* has been transformed from a simple family celebration at home into a large *toy* industry that involves a range of small various businesses in the city: car rental, photography and video-making, tailoring, dance groups, shops and restaurants, gifts and souvenirs, and beauty salons.

[13] In the context, the word is used by the locals to define people who not only have dacha but also permanently live there.

[14] In the context, it means 'trader'.

People, who have decided to arrange *toy,* usually should invite from 200 to 500 guests not only from Jańatas but also from neighbouring villages and cities (mostly Taraz and Shymkent) in order to reimburse all the expenses involved into the preparation of their *toy* and to apparently make a good profit. In the meanwhile, different rates in the city were developed for different kinds of guests, ranging from 25 EUR for colleagues and friends to 250 EUR for close relatives. However, one who organizes *toy* should remember that he or she is obliged to pay it back by attending the other *toys* which will be arranged by their guests. That turns *toy* into the most notable feature of making money by local residents. Here, I would like to provide some quotation of my informants, expressing their views toward the necessity of having *toys*:

> *You always should bring no less than you received before. For example, if I gave you 10,000 KZT on your toy, you should bring to my toy from 10,000 to 15,000 KZT.* (Katya November 2018)

> *Many people arrange toy owing debts to everyone in the bazaar. They know approximately how much money they should collect after their toy.* (Kazakh female in the local bazaar November 2018)

> *I spent around two million KZT for my toy. After that, I made around three million KZT. So, I then could pay back all my debts.* (Alma November 2018)

I suggest considering *toy* as an informal economic activity in the form of a short- or long-term credit based on informal, personal networks and a moral obligation to pay it back by participating in a next *toy.* Trust is also an essential element of this deal, and it is determined by belonging to ethnicity and sometimes to particular Kazakh kin known as *juz*.[15] On the other hand, this local socio-economic practice could be also understood as an informal form of social security developed by individuals in order to help and support each other within small networks. Even *toy* as a survival strategy is mostly practiced by Kazakh-speaking residents of Jańatas, non-Kazakh residents can be also engaged in this activity either as a guest or an entrepreneur for the arrangement of *toy*.

Figure 4: Businesses like car rental or restaurants profit from toy

[15] Kazakhs generally divided themselves into three tribal confederations called *juz* which, in turn, subdivided into numerous tribes (called in Kazakh *ru* and *taipa*). The most spread version of *juz*-formation refers to a concept of geographical and economic division of Kazakh tribes that emerged in the middle ages due to adaptation to the natural and climate conditions and the nomadic livestock breeding economy. The areas occupied by three Hordes today correlate with the following territories of the country: the Great Kazakhs generally divided themselves into three tribal confederations called *juz* which, in turn, sub-divided into numerous tribes Horde in Southeastern Kazakhstan, the Middle Horde in Northern and Central Kazakhstan and, finally, the Lesser Horde in Western Kazakhstan

3.6 Debt economy

As noted above, the most insightful research finding of the present study was the phenomenon of the *debt economy*, as I call it. According to the result of the household survey, 93 (out of 151) respondents pointed out that they go into debts in order to meet their basic needs, to save and, in some cases, literally, to economically survive. The notion of debt economy, as I understand it, is the most popular and wide-spread economic survival strategy of the local population in Jańatas. I consider the idea of debt economy as practices in the form of a deal or 'trade partnership' between individuals to obtain goods and services for a short or long term based on various debt (and barter) chains and trust, which also create certain socio-economic relations between members within an informal network. Similar to the above-mentioned strategies, the debt economy in Jańatas is largely based on small, informal, personal networks of remaining residents who know and trust each other.

This informal economic practice is rooted during the times of 'wild' economic environment existed in the 1990s, when a local *akim* (mayor) Mr. Alimtayev had developed a so-called *alimtayki.* That was a kind of coupon that was distributed to the local population which citizens could exchange for basic foodstuffs and goods, such as bread, milk, rice, toilet paper, soap, and so on. In the meantime, instead of coupons, local retailers and entrepreneurs began to keep various debt-notebooks[16]for different kinds of customers: friends, colleagues, reliable and unreliable clients. Even if nowadays, there are no *alimtayki* coupons anymore, however, residents continue practicing debt economy. Local traders and entrepreneurs keep debt notebooks, which are carefully grouped by year, organization, and duration and can be found in each shop and bazaar container in the city. Moreover, some clients also have their own debt-notebooks in order to control their own debts themselves. In addition, among local traders, pensioners and people who are employed in the state sector are commonly acknowledged as most reliable customers in the city.

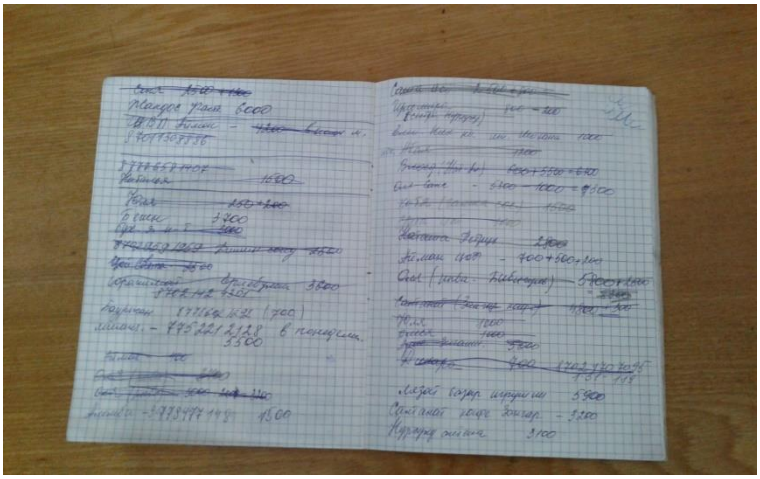

Figure 5: Debt-notebook

In general, the entire debt system operates as a non-monetary deal without papers and witnesses that is largely based on two essential elements: a high degree of trust (determined by place and personal contacts) and small-scale, informal, personal networks, including those between wholesalers and retailers, among retailers, and, finally, between retailers and customers. Therefore, the debt system shapes a particular kind of the socio-economic relations based largely on trust on the micro-level. Most informants report that the debt system can work easily only in Jańatas because

[16] Qaryzǵa arnalǵan dápterler jáne kitaptar in Kazakh and dolgovaya tetrad' or bloknot in Russian

everyone literally knows each other. Assem, a Kyrgyz female in her 40s who worked in the kindergarten in Soviet Jańatas, has her own container in the local bazaar and sells textile from Bishkek. She explained the phenomenon as follows:

> *If it were Almaty or Astana, there would be a different life. Our town is like a small village, we owe each other, and we live in this way. There is nowhere to go, nobody waits for us there. If you go to the big city, nobody will give you a loan. Nobody knows us there.* (Assem November 2018)

Sometimes, the debt economy in Jańatas also includes elements of barter understood as a form of non-monetary exchange of goods and services within an informal established network of local retailers and entrepreneurs (Humphrey 2000a, 2000b). Most respondents are local entrepreneurs and retailers who practice the debt economy not only in their business but also in their personal lives. Amina, a Kazakh female in her 50s, runs a mid-sized grocery shop in the downtown of Jańatas. She regularly takes in debt food supplies by other larger retailers at the local bazaar and, later, gives them to her own clients, however, only to those whom she might trust. Amina always takes in debt clothes for herself and her children by her close friend, who has a shop in the *Bastille* residential building. Similarly, Elena, a Russian female in her 40s, runs her small business in the beauty industry. She explained how she exactly practices the debt system in her life:

> *You go to the bazaar like to your home. You can take whatever you want. Most importantly, you should bring at least something every month. This is our life in Jańatas. (...) We know very well, who pays back in time, partly, or doesn't give at all. People who work in trade know everybody in the city. I have a good reputation, thanks God. In every shop I can easily take what I need, the same is with groceries. For example, when I need to buy milk or bread I come to a shop and say to write it on me. The shops regularly have three notebooks: a list of people who pay back on time, for a short and long time.* (Elena November 2018)

Fraud happens more frequently in their businesses. Some people from neighbouring villages come to Jańatas to take food and clothes, pretending to be locals. While doing so, they usually refer to citizens of Jańatas whom retailers might personally know, as a guarantee that they are, in fact, from the city. Others give a third or half of the debt amount, promising to bring the remaining sum in the next month, then disappear forever. In some cases, people leave bank cards, ID cards and other documents, as a guarantee, in order to take next goods in debt, but also as a way to cheat and not come back. Furthermore, every retailer and entrepreneur in the city knows exactly when salaries and pensions are paid out. On these days they commonly go to a couple of ATMs in the downtown in the hope to receive their money back from their debtors. In general, by paying back their debts usually people immediately take another one as they simply do not want to give cash. Regardless of status and salary, in this way financial flexibility is widespread. As pointed out by several informants, the debt economy in Jańatas has turned from a kind of economic support to each other in the 1990s into a habit of citizens and an essential part of the local mentality.

3.7 Conclusion

Using the household survey and an ethnographic approach, this study has identified different survival strategies developed by residents of Jańatas to cope with a new socio-economic situation that emerged after the collapse of the Soviet system, command-based economy and, more significantly, Moscow's support. Initial household survival strategies in post-Soviet Jańatas were rooted in political uncertainty in the 1990s, while contemporary strategies are shaped by new economic, political, and cultural contexts. Having been initially developed as temporary survival strategies to manage their economies and trade during the uncertain 1990s, informal economic practices, such as the debt economy, have become a part of the local mentality and the key attribute of the socio-economic relations among local population, where trust in each other is crucial.

The phenomenon of the debt economy sheds light on a complex set of issues existing in such places as post-Soviet mono-industrial cities. Saxinger et al. (2016) characterize spaces with "double lock-in phenomena" when they include institutional weaknesses, on the one hand, and a traditional – from the Soviet time – centre-periphery divide of power, on the other. The notion of the debt economy in Jańatas as a form of informal economy can exist and successfully operate due to the absence of the needed institutional frameworks which a market economy requires (Turaeva 2014). In addition to that, there is a range of other non-economic factors: distrust to authorities, a lack of civil societies, corruption, and social insecurity, which should also be taken into account (Ledeneva 2001; Nazpary 2002). In this context, informality on different levels and in different forms preserves to play a leading role not only in daily life of remaining citizens but also in functioning the whole city life.

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4 Economic Survival Strategies in the Post-Socialist Mining City Chiatura

Tatia Kartlelishvili

4.1 Introduction

Following the Soviet Union dissolution in the early 1990s, former Soviet republics did face different kinds of challenges. At the first stage of transformation, economic, social, and political changes had a negative impact on post-Soviet republics' populations, social institutions, and conditions in general. The cities were no exception. Urban infrastructure was largely destroyed, and living conditions have deteriorated. Mining cities counted, in the Soviet period, to the more privileged settlements, since they profited from large investments into the development of extractive and heavy industries. "Mining cities are a vulnerable category of urban settlement because their economy is based and mostly depends on the extraction of natural, non-renewable resources" (Li et al. 2015). After the Soviet Union collapsed, mining virtually ceased, while most remaining mines were privatized – in the case of Chiatura by the "Chiaturmanganum" company.

Despite the fact that the city of Chiatura is still dependent on this industry until today, the current situation is far from the one established during Soviet times. Chiatura and its general conditions repeatedly drew public attention. Never-ending discussions on workers' conditions and social instability did not come up by surprise, and underline the actuality of this present research. In this way, the most important and relevant sources of information are people. Those who remember mines and mining cities in the socialist period and still see and evaluate the situation in the post-socialist reality. It gives valuable leverage to both periods of the city's life and reliable ground for comparison.

According to employees, conditions in mines are extremely difficult and dangerous for workers, which was reportedly not the case in Soviet times. As they mentioned, mines were built to satisfactory safety standards and additionally, reinforcement work was taking place regularly. Still, it is worth mentioning that there is no reliable data on death or injuries of workers for comparison. Moreover, there are clear indicators that social protection, healthcare, and emergency response systems worked better compared to the ones in place today. Due to the open-pit extraction of manganese and/or its transportation in open vehicles, serious damage has been caused to the ecology of Chiatura. Land, water, and air are polluted, which in turn affects not only the miners' but every citizen's health and the urban environment in general.

The relevance of this paper shines through its contribution to background knowledge around post-social mining cities (that is, mono-industrial for the most of them, as well), and their challenges after the demise of state socialism. Indeed, the future development of post-socialist towns has increasingly drawn scholarly attention. In recent years alone, a plethora of significant contributions has seen the light of day, as well as numerous conferences and workshops (Brade and Neugebauer 2017; Ferenčuhová and Gentile 2016; Frost 2017; Gentile 2018; Hagen and Diener 2018). Three decades have passed since the fall of the communist regime – long enough to give some responses to the question whether post-socialism is still a valid framework of analysis. Some believe that the term is useless because sufficient time has elapsed since the collapse of the USSR (Chelcea 2016; Müller 2019) while others advance that the term is relevant, since links and continuities still play a major role (Hann 2002; Humphrey 2002). For some authors, the notion of a "post-socialist" city becomes a "container term" used to define heterogeneous occurrences (Tuvikene et al. 2019). With this in mind, we can argue that the "past" remains to survive, and its existence is more essential than might originally seem: it remains in the appearance of the city, in its construction systems, in urban development, and in everyday practices (Ilchenko and Dushkova 2018). Housing policy norms, development trajectories, green spaces, for instance, are still largely determined by the past. This refers to the argument that a multifaceted, changing and transforming past is intrinsic and inevitable in contemporary cities (Tuvikene et al. 2019). Against

this backdrop, this research aims to study the process of post-socialist transformation and the impact of this process on the quality of life and employment.

In order to reach the goal, the paper is based on a broad range of data from Chiatura, including a survey, aimed at obtaining detailed information from residents. The data concerns demographic, economic, and social conditions of citizens. In addition to quantitative methods, qualitative approaches complemented these questionnaires: literature review, in-depth interviews, observation, document, and discourse analysis, with the aim to provide both, an overarching understanding of the city's post-socialist environment, as well as to provide detailed insights on everyday aspects of Chiatura people's lives.

4.2 Background information

4.2.1 Basic information about the city of Chiatura

Georgia is a country in the South Caucasus region. It is located at the crossroads of Eastern Europe and Western Asia. Independent since 1991, it is a semi-presidential republic with a democratically elected government. Georgia covers a territory of 69,700 sq.km all while almost a fifth of its territory is occupied by Russia (Blank and Noone 2018). Its population amounts to 3,729,600 inhabitants (National Statistics Office of Georgia 2018). Most citizens are ethnic Georgians. After being incorporated into the Russian Empire in the early 19th century, Georgia was part of the Soviet Union from 1922 to 1991. This period is characterized by political repression and economic upturns, as will be discussed later in more detail.

Chiatura, a small mining city, is situated at 340 to 500 m otabove sea level, in the northwestern part of the Imereti region. The population of the Chiatura municipality is 39,000, while the city proper counts 12,800 inhabitants (National Statistics Office of Georgia 2018). According to Georgian legislation, a person, regardless of age, must be registered at the relevant address by place of residence. However, this data does not provide us with an accurate measurement of the number of city residents. Many houses or flats are either used temporarily or bear no sign of residents – some feature huge locks, but others remain open for everyone, without either floors, walls, or furniture. In addition, respondents reported that many inhabitants remain registered in Chiatura, and actually live in the regional centre of Kutaisi, in the capital city of Tbilisi, or are in emigration. Other residents might be registered in rural areas but live in the city for being closer to work.

There are 23 kindergartens in the municipality, 17 public and two primary schools and additional private, theological, music and sports schools, as well as a regular summer camp for socially disadvantaged children. The municipality has three hospitals, rural outpatient clinics, several local newspapers, and an active football association. The city features a local museum, and a drama theatre. Transportation relies on minibus service, buses, taxis, infrequent railway connections, and ropeways that connect the uphill neighbourhoods with the city centre in the valley. Roads are mainly paved but damaged.

4.2.2 The history of mining of Chiatura

In Chiatura, manganese was discovered already before the common era, as confirmed by archaeological evidence. Manganese is mainly used in the manufacture of steel, added in the form of its alloys with iron: *ferromanganese* and *spiegeleisen*. It is also used in glassmaking, in nuclear power production, in the chemical industry and in electric batteries (American Association for the advancement of science 1918). In addition to manganese, other minerals are found in Chiatura as well. During Soviet times, high-quality red marble and quartz were extracted, which is now suspended, though in locals' opinions, these minerals have a great potential to improve the economic' situation. Residents also point out that the area is rich in cobblestone used for construction, and gold, which has not been extracted so far.

From the 19th century onwards, the Argveti (a historic district in Upper Imereti, where Chiatura is located) became known for its rich manganese deposits. In 1845, the first article was published on Chiaturan manganese in the Russian "Mining Journal". Hermann von Abich, a German scientist known as the father of Caucasian geology, contributed to further studies of Chiatura manganese. In 1872, on Akaki Tsereteli's[17] direct request, his friend Spiridon Simonovich (originally from Serbia, Simonovich had obtained a PhD degree in geology) carried out research on Chiatura's natural resources. On the basis of his report, the Caucasus Mining Division sent further experts to Chiatura (Georgian Soviet Encyclopedia 1985).

A new era for Georgian manganese production and development of Chiatura began after the establishment of the Soviet Union. According to a resolution of the Revolutionary Committee, mines were nationalized. However, the new born Soviet state was unable to continue running the mines which suffered heavy damage in World War I. To remediate this situation, the decree of 23rd November 1920 enabled foreign enterprises to exploit Soviet natural resources and engage in industrial enterprises through concession agreements. On 12th July 1925, the Soviet government signed a contract with the American firm "Harriman and Company" and handed over the Chiatura mines for a period of 20 years. Harriman had to restore the production capacities but remained unsuccessful. Particularly, "Harriman and Company" was unable to fulfil its contractual terms relating to an increase of production the involvement of local residents as employees. In 1925, 3,150 people were employed in the mines, while in 1926 this number decreased to 1,500, and to 500 by 1928. The agreement between "Harriman and company" and the Soviet state was abolished in 1928, and the mines reinstituted as state property. In the same year, the Communist Party resolution set up the first five-year economic development plan, which aimed for a rapid industrialization of the country (Chiatura 2007).

By August 1928, out of 31 industrial objects, only one enrichment factory and two mines turned out to be in a working state. This led to the creation of a special unit charged with restoration work. The number of employees increased rapidly and reached 7,897 people in September 1929. The years 1929 to 1930 saw further geological exploration of Chiatura mines. In 1932, a general reconstruction plan for manganese industries was set up, which led, in 1933, to the start of a comprehensive survey of Chiatura manganese deposits (Chiatura 2007). By 1945, the mining process was completely restored. From 1950 to 1955, manganese extraction increased by about 69%. Exports have also increased significantly, in 1951 to 1955 "Chiaturmanganum" produced 12,629 million tons of ore, from which 12,496 million tons were exported. Moreover, in the 1950s, the spread of open-pit mining brought about a number of advantages in ore extraction, simplified the working process and made it safer (Chiatura 2008).

After the collapse of the USSR, International ore export became more difficult. Resource extraction started to diminish. "Chiaturmanganum" strived to not lay off employees but could not pay full salaries. In 1995, the manganese output plan of "Chiaturmanganum" was 1,688 million ton – compared to a factual output of 127 – only a fraction of the production plan. The situation did not improve in 1996, why a reduction of production capacities and employee numbers came on the agenda. In compliance with the laws of that time, employees were given a two-month warning and received a one-month salary after lay-off, and six months of unemployment benefits (Chiatura 1996).

In 1998, the company sold parts of its operational machinery, such as oxygen adaptive aggregates, large load capacity engines, and tractors in order to pay its debts in terms of unpaid wages, taxes, etc. Despite all attempts, in 1998, "Chiaturmanganum" was put on public auction (Chiatura 1998),

[17] Akaki Tsereteli (1840 to 1915) – Famous Georgian poet, writer, publicist, and public figure, one of the leaders of the National Liberation Movement of Georgia.

won by the Czech company "Saga Prints". The contract stipulated an increase in production capacity, a development of marketing efforts, credit repayment, and an improvement of the city's environmental conditions. This ambitious investment programme, however, never came to fruition. Only 6,000 tons manganese concentrate were eventually stocked, but the company failed to find buyers, and production stopped shortly after. The situation of "Chiaturmanganum" deteriorated significantly. Growing debts in social insurance, electricity bills, and, more than everything, unpaid wages, reached 690,000 GEL (ca. 338,333 USD). "Saga Prints" applied to the Ministry of Property Management for a credit of 700,000 USD from the National Bank and put one of the enriching factories as guarantee (Communist 2000a). By the end of the 1990s, the company still partly paid salaries to its employees in spite of a production stop, yet it amounted merely to 18 GEL (ca. 6 EUR) per month (Communist 2000b).

In 2005, "Chiaturmanganum" was fined by the government due to irreversible negative impact on the environment and the damage caused and declared bankruptcy in 2006. The following auction procedure attracted only one bidder which bought all 100% of government shares in the company.[18] From this time on, "Georgian Manganese" (abbreviated as GM) remains the main employment provider of the city. 48.1% of Chiatura's workforce is directly working for GM, yet many more construction and other sub-contracting jobs depend on the company, without technically being directly subject to it. Also, the city's ropeways and enrichment factories depend on GM. Additionally, residents can mine manganese ore on their own, even in their own yards, and sell it to GM for 70 USD per ton. These people are considered self-employed despite the fact that they are working for the mining company.

4.2.3 Chiatura government, mining company and others

Chiatura, as other cities in Georgia, is governed as part of a larger municipality, through its representatives and executive authorities, as well as mayor's representatives of mayor in the municipality's 15 administrative units. The representative body consists of 15 proportionally elected members, and 16 further members elected in single-seat electoral districts. The executive body is the local government, which consists of structural units (local government units) and territorial units, including the town of Chiatura properly speaking, and further settlements in the surrounding area. The head of the territorial unit is appointed and dismissed by the local governor in accordance with the Public Service Law. The municipal territory is included in the mining allocation, according to the licence agreement, which is a great challenge to the local administration. The license holder is authorised to make decisions on issues related to spatial development or any other issues of the city. This is a hindrance to self-government and sustainable growth of the town.

Today, the largest importing country of Georgian manganese is the USA, accounting for about 80% of manganese exports. Further manganese deposits are located in Brazil, India, and Russia. The US relied on imports from Brazil, which, however, were not sufficient to cover local demand (American Association for the advancement of science 1918). Geologists point out that there has been a great demand for Georgian manganese because of its high quality – and the demand for Georgian manganese has been increasing since 2017, all while the manganese stocks are expected to be depleted in 20 to 30 years. It should also be noted that not only the city but also the country's

[18] At the time of the transaction, Georgian Manganese Holding Imitation was a subsidiary of the well-known British company Stamcore. By the end of 2006, Stemcore had sold 75% of the holding to the Ukrainian Privat Group. In 2013, Privat Group reorganized the Georgian Manganese (formerly Chiaturmanganese and Zestaponi Ferro) and the Georgian Manganese-owned Vartsikhe HPP cascade into its American holding Georgia American Alloys; However, this fact was introduced to the Georgian society as the "arrival of a new management" in the enterprises (Green Alternative 2016).

budget largely depends on the extraction of manganese. Reportedly, the total production turnover corresponds to 10% of the country's total exports.[19]

Chiatura is not a financially independent district. Most of the finances paid by the mining company go to the central budget, while a small part remains in the local budget. The center then distributes and transfers a certain amount to the local budget. Local government, citizens, and the mining company are inextricably linked, even though their connection is voluntary (Figure 6).

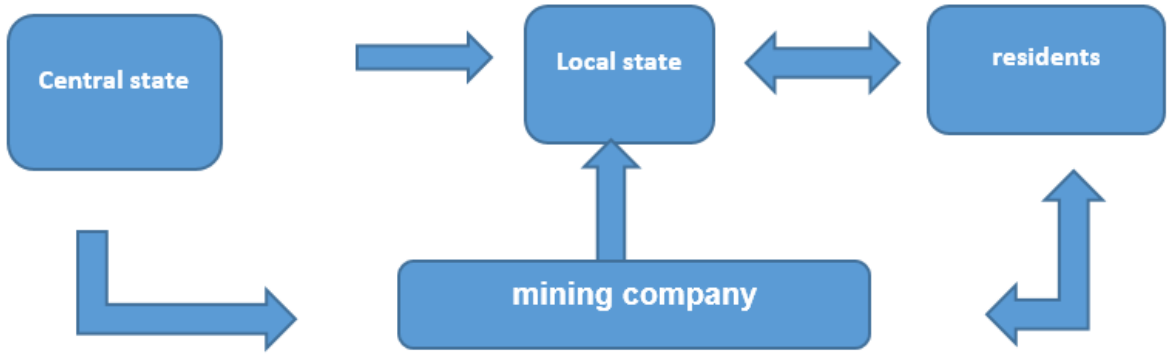

Figure 6: Power relations among the actors in Chiatura

Apart from the central budget, which finances the regions, Georgian Manganese also contributes directly to the Chiatura municipality budget. The budget of Chiatura was 20,696.95 GEL (ca. 6,899 EUR) in 2018, from which 5,767.75 GEL (ca. 1,922 EUR) comes from the central budget, and most part of the redeemed budget from GM. As defined by the general director of Chiatura mount-enrichment combine of Georgian Manganese below, the perspective of GM leadership on Chiatura's resources is capital-oriented and problems are being monetized. This means that in order to solve the problem, new methods of generating revenue are sought from new sources.

> *I can tell you that the city [meaning Chiatura, TK] we live in is at the expense of GM. About 80% of the city is ours. If it [meaning mines, TK] didn't work, the city would be dead. Also, I tell you that we have 12 organizations, and we pay about three million GEL (ca. a million EUR) to the city budget. Three million GEL, in my opinion, is enough for a small city, as well as villages, which work [meaning manganese extraction, TK], pay three million GEL (ca. a million EUR) too, 6 million GEL (ca. 2 million EUR) is not too little for a small Chiatura. The most expensive market in Georgia is in Chiatura, even though they [meaning residents of Chiatura, TK] say food, meat, eggs, etc. is cheap, but the market is expensive, you can see how many cars are in the city, it's a very active city.* (Akaki 2018)

However, the abovementioned data is not easy to check and confirm. According to the official budget of Chiatura, we cannot specify the precise amount of GM's contribution. It is lumped together with other sources like grants and dotations. Neither do we know how this money is spent and allocated by the local government.

4.3 City layout of Chiatura

Urbanization is considered as a development of urban living, affecting the social and demographic structure of society, culture, lifestyle, and intercultural relations (Sulukhia 2001). Before Soviet rule, city development took place without planning. During the Soviet period, multi-year plans laid out the foundations for city development. Following Chiatura's head architect, the plan was meant to be completed by the year 2000 but was large and by forgotten after the collapse of the USSR. Nowadays the municipality does not have a city development plan for its strategic orientation.

[19] www.gaalloys.ge, 2018, November 21

This is why the current city is characterized by buildings built by the end of the 19th and the beginning of the 20th century. Since the 1990s, no large construction, even of residential buildings, did take place. Most facilities are abandoned or need rehabilitation (The basic plan of Chiatura 2016).

Today, Chiatura consists of six neighbourhoods, which are infrastructurally and socio-economically different from each other. Besides, the condition of roads, railways, ropeway, bridges, and underground amenities is drastically different. In the suburbs, most train platforms, ropeway stations and underground passageways are abandoned, and roads are mostly damaged. They have differentiated access to city utilities. Also, in some neighbourhoods, no schools, playgrounds, or other social infrastructures are to be found.

Talking to the city administration has revealed that it is difficult to allocate funds for less populated neighbourhoods. The municipality prioritizes densely populated neighbourhoods to satisfy the demands of more citizens. The municipality representative mentioned that in suburbs, facade works are carried out only along central roads. Other projects are only on demand and co-financed, as will be discussed further below.

As locals mention, they try to maintain what was done in the Soviet era, which proves particularly difficult for road infrastructure. The reconstruction of ropeways, at a cost of 13 million EUR, it is one of the major reconstruction projects of Chiatura. Indeed, residents have expectations towards the municipality, and still wait for more changes to come (Residents of Chiatura 2019).

4.4 Infrastructure and amenities

4.4.1 The infrastructure of mines and factories

The mining infrastructure is fully maintained by GM, and physically and financially separated from the regular city infrastructure. The development and maintenance of this infrastructure serving mainly mining purposes, is one of the most important issues for the company. Some or parts, such as passenger transportation, is partly financed and maintained by GM, and is available free of charge for all residents and guests of Chiatura.

According to Chiatura's main architect, during the Soviet era, there was a general renovation plan of the city. In the neighbouring Chilovani village, the plan stipulated for a city extension called Chiatura-2, yet the plan did not come to fruition. In 1929, the construction of extensive mining transport infrastructure started. In 1931, an incline was built, as well as a ropeway in the Tsirkvali valley, as well as a 7 km long ropeway in the Rgani valley (Chiatura 2007). In 1935, the construction of the "BC" enrichment factory was completed, in 1936 to 1937 two further enriching factories opened their doors. The central part of the city was cleaned from manganese waste ore, and a warehouse was built (Chiatura 2008b). In 1938 to 1940, the peroxide enrichment factory began working (Chiatura 2008d). In the 1970s, a dam was built on the Kvirila river. The water level rose to 5 metres and was used for sport activities after cleaning the manganese tailings. A sludge storagewas furthermore built a cost of 15 million roubles, protecting rivers from manganese dust pollution (Chiatura 2009).

During the Soviet era, manganese was transported by ropeways from mines to the enrichment factory. A railway track reached the enrichment factory, where refined manganese was loaded for further transportation. Today, only a small fraction of manganese is transported by train, with the majority relying on open lorries. Thus, manganese spills into Kvirila river, which poses a serious threat to the city's ecology. As the director of Georgian Manganese said, construction for a new enrichment factory is under way, at a cost of 20 million GEL (ca. 6.5 million EUR). This plant is meant not only to enrich the manganese, but also alleviate some ecological problems.

Network infrastructure

In 1953, the first passenger ropeway was built in Chiatura. It connected the city centre with the industrial area. In 1928 to 1931, a diesel-powered electricity station was built in the city centre, installed by German specialists. Water storage pools were built, alongside a sewage system (Chiatura 2007). On 30th July 1930, when the construction of the Zestaponi-Chiatura high voltage transmission line was already completed, the opening ceremony for the Rioni hydroelectric power station took place. In later years, wooden power poles were replaced by metal ones (Chiatura 2008a). The 1950s saw the reconstruction of all city bridges. Also, the construction of a full-fledged railway line is considered as an important achievement of this period (Chiatura 2008a). In the 1970 to 1980s, roads leading to surrounding villages were covered with asphalt (Chiatura 2009).

During my stay in Chiatura, water was always delivered according to a schedule. It flowed for a few hours a day and it was mostly dirty. Reservoirs, head structures and pipes were damaged. Therefore, residents had to buy water or bring it from the springs. However, the drinking water system was being changed at that time of research.

Housing condition in Chiatura

It was important for the Soviet government that workers had good housing conditions: a satisfied workforce would generate more than an unsatisfied one. For this reason, "Chiaturmanganum" deployed funds to build the houses and leisure amenities for its workers. During the 1930s, ten blocks of flats were built for miners, and further three blocks in the city proper (Chiatura 2007). Since 1933, the construction of apartments gained pace. Standard wooden houses, as well as residential buildings on central streets, as well as smaller cottages were built. City squares were also built and renovated. A three-storey hotel and two two-storey buildings were built in the centre of the city (Chiatura 2008c). Because of the intense construction activity in this period, it was necessary to establish a construction company. Thus, "Chiaturmsheni"[20] was created as a subsidiary of "Chiaturmanganum". Additionally, a construction trust was set up to administer respective funds (Chiatura 2008b). In 1949, 1,241 million roubles were spent on constructions, rising in 1951 to 1955 to 26,875 million roubles. In these years, 72 apartment building were built in centre (Ninoshvili street), as well as the "Sapari" settlement close to the Lenin mine in a suburb of Chiatura. A leisure home was built for miners on the periphery of the city, on what is today Gagarin Street. In 1956 the construction of the "Chiaturmanganum" administrative building was completed, considered to be one of the most beautiful buildings in the city, housing today the administration of "Georgian Manganese" (Chiatura 2008c). In 1966 to 1970, further 25,549 sq.m of living space were added to the city's housing stock (Chiatura 2008a). After the fall of the Soviet Union "Chiaturmsheni" was liquidated and constructions stopped. The government had no financial opportunity not only to improve or reconstruct existing buildings, but even to maintain their current function and exterior.

In our survey, we asked the population to identify problems in relation to their flat or house. The three main problems were: 1. Flat/house needs renovation (67.1%), 2. Water supply problems (63.6%), and 3. Residents cannot heat up the whole flat/house (56.9%).

To remedy the first issue, citizens can turn to the Condominiums Development Programmes. Homeowners must submit an application to the municipality and request co-financing. The only fully financed amenities include: Covering the yard with concrete and pressed tiles (and, if necessary, open or closed drainage channels); playgrounds; garden sheds; small trash bins. Yet applications to the programme are not frequent. As the head of the infrastructure department explained: "Projects we made are not high quality. It is not decided in detail. For example, even if we

[20] "Chiaturmsheni" translates as "builder of Chiatura".

decided to reconstruct the playground, put chairs, lights, and so on, we agree with the design, depending on what you can get in Georgia, for example. The diode lights are barely shining, there are many suppliers, one of them is a Georgian company, how good they are doing is another matter. The bulbs we bought could not withstand the voltage, the voltage change, etc. There are many desires, but the opportunity does not follow the desire" (Davit, Department of Infrastructure 2018). The municipality knows that what they are doing is not of high quality, since they are compelled to buy cheap products following tender regulations[21].

As for the water problem (see previous section for more details), there are hopes that the situation will substantially improve with the new water supply system. The third problem is mostly related to citizens' economic situation. The entire house cannot be heated due to the availability and price of wood or gas, resp. according to heat metres. Heating additional rooms means incurring additional cost, and citizens try to avoid it. To summarize, general housing conditions do not meet the satisfaction of the local residents, and the general quality of living.

Health care facilities

Health care facilities during the Soviet era were public. "Chiaturmanganum" administration believed that timely medical services should be available to miners, meaning many medical institutions were set up in the Soviet era. In 1930, a polyclinic opened, with a separate paediatric department and an x-ray cabinet. In 1932, the blood transfusion department was opened. From 1934 to 1936, healthcare centres were opened at miners' housing facilities. In 1936, the Chiatura manganese trust built a two-storey hospital, with 200 beds, surgical and epidural-gynaecological departments (Chiatura 2007). In 1938, emergency medical care brigades were established, and in 1940 an emergency medical service started operating. The medical staff was sent to work in the city directly from the medical college. A further 250-bed hospital was built in the settlement of Naguti in 1967 to 1969, equipped with the latest medical technologies of the era (Chiatura 2008d).

Currently, there is a multi-profile medical centre and a stationary medical facility in Chiatura. Both are owned by Geo-Hospital Ltd, which employs 121 people. The modern hospital made a positive impression on me at first glance, but the public has a different opinion. Due to a lack of beds – the hospital has only 25 beds – patients are either left without care or are treated in inappropriate conditions. Sanitary standards are not respected. There are no sections in the reception for different types of diseases. Consequently, an infected patient may be found next to a pregnant woman. Amid lack of beds, GM decided to provide their employees with healthcare insurances, so that they can receive medical services in Zestaponi. This is an ambivalent measure: if people were restricted to receive medical treatment in Chiatura, they would face a severe lack of beds. Yet now, insured citizens have to move to another city to get medical services, even in case of a mining injury.

According to my informants, the current and Soviet-era medical facilities are radically different. The medical system in the Soviet era made it easier for the population to receive medical care. Now the process is more complicated with only one medical centre, which is moreover plagued with disadvantages such as overcrowding described above.

Culture and Education

In 1932 to 1933, Chiatura saw the opening of an external study centre of the Georgian Metallurgical Institute. Professors were invited from Tbilisi. Along with providing the condition for general education, the state policy also intended to educate people culturally. Since 1928, miners' singing teams were formed, and since, 1933, also orchestras. In the 1930s the workers' theatre, built in 1909, underwent reconstruction (Chiatura 2007). A workers' club and library opened in the

[21] public organizations cannot buy services and goods without tender and usually they choose companies who suggest the cheapest service or products.

1930s to 1940s. In 1934, the first kindergarten opened, and in 1935, the first Russian school (Chiatura 2008b). In the early 1940s, the city's third high school was opened (Chiatura 2008d). In 1949, a new theatre building was opened, and in 1968 – the city's house of culture. In 1964, the Kvirila riverbed was built over with the "Magharoeli"[22] sports complex, designed for 10,000 spectators. In the 1960s, the "Chiaturmanganum" financed the construction of a four-storey City Culture House (Chiatura 2008a). At the same time administrative structures, colleges, parks, and social facilities construction received supported in every village (Chiatura 2009). In the 1970s, 420 people employed in the mine had higher education, while 458 had a medium technical education, witnessing a high educational standard within the workforce and in the city in general.

Once again, the political and financial transition of the 1990s confronted Chiatura with complex problems. Industrial infrastructure was weakened, and funding for cultural and educational institutions withered.

4.4.2 Chiatura neighbourhoods

Unofficially, in everyday nomenclature, Chiatura is divided into six neighbourhoods. These districts are designated by their names, which even appear in the newsfeed on the municipality's official Facebook page. All these neighbourhoods were built during the Soviet era. According to locals, the neighbourhood subdivision is merely a geographical one, without effect on the relationship and attitude of the population towards each other. Locals claim that this separation is a formality and describe Chiatura as a pleasant and friendly town: "The city of Chiatura is a cohesive city, everyone knows each other. City residents rarely get into conflict because they are relatives at last. Some are godparents, some are cousins, and it is a very positive side" (Interview with Dato, 34 years old, 2018). When I had an interview with the director of the museum of the Manganese Trust, before introducing myself, she had already received some information about me and mentioned that I lived in the flat of a man, whose grandfather was a miner. Indeed, everyone knows each other and if a new person appears in the city, then information is easy to come by.

Nevertheless, neighbourhoods vary in terms of infrastructure, transport, connections to metropolitan assets and even the financial position of the population, as outlined below.

1 **Lezhubani** is a suburb of Chiatura, which is situated in the north-east part of the city. It is characterised by low-rise residential buildings, wide streets, and an abundance of plane trees. The district is close to the centre and can be reached by foot, on "marshrutka", or with the ropeway. Due to its proximity to down-town, there is only one small grocery shop in the district and no other facilities.

2 **Naguti** is situated in the north-west part of the city and bordered by Lezhubani. It was built in the early 1940s (Chiatura 2008c). There are mainly nine-storey and rarely three-storey residential buildings, and most of them are abandoned. The area is located some 3 km uphill from the city centre, so that walking from the city is almost impossible. The marshrutkas, however, serve the route only until around 6 p.m., which locals consider to be a major problem. Residents mention that most of them work in the centre and return to work after 6 o'clock, so they have to take a taxi, which is an additional expense. During the Soviet era, the centre was also connected to the district by ropeway, which, nowadays, is destroyed. Naguti is a pretty big district with a church, kindergarten, school, two small grocery stores and one bigger store (Gela's[23] shop, the locals are using it as landmark for strangers in explaining an address). The only hospital in the city is situated in this district.

[22] Magharoeli in Georgian means miner.

[23] Gela is a name of owners and local men.

3 **CDF**[24] is a place where the central flotation factory was operating during Soviet times. This neighbourhood was settled by factory workers. It is located in the south part of the city. Nowadays, nothing is left from that period except the name. Most buildings in this area have been demolished, other buildings are populated with internally displaced persons from Abkhazia who arrived in 1992 to 1993. Many old buildings lost their function. After privatisation, many people could not take care of these buildings, so that because of the hard economic situation, many buildings with some value were demolished. Some were unable to maintain these buildings, some had no financial support, some moved to another city or country. The district is very close to the centre, just on the other side of the railway line, and connected by two underpasses. However, most people prefer to cross the railway from above. There are several small shops, the theatre (in which the citizens take particular pride), a sports and fitness complex and a stadium – the latter, however, is in poor condition and it is almost impossible to hold events there.

4 **Pasilok**[25]**:** this area is situated in the Eastern part of the city, and used to house miners in the vicinity of their workplaces. Nowadays, this neighbourhood is coloured in black (buildings, fences, road) because of manganese dust rising from open-pit mines. Most flats and houses are abandoned, some of them unfit for living. The ambulance headquarters are located in the district. Pasilok has neither a school, nor a kindergarten. It is not in walking distance from the centre, yet every marshrutka en route to Tbilisi or Sachkhere passes through this district. In the perception of most Chiaturians, only people with economic problems reside in Pasilok.

5 **25th:** Named after mine Nr. 25, this district is situated in the Southeastern part of the city. The district used to house miners working in namesake mine, yet now the district is almost empty. In this neighbourhood two nine-store buildings lie empty, with only 18 families living there. It is located on the mountain, 5 km away from the centre. There are no buses or marshrutkas; the only ways to access are ropeway or taxi. The latter is quite expensive – approximately 12 to 15 GEL (ca. 4 to 5 EUR), which limits the residents' mobility options. The district has one kindergarten, but no shops, schools, or playgrounds. The residents' economic situation is very poor. During fieldwork, I witnessed several situations that proved the extreme economic hardship. For instance, in one of the families, seven household members were living in a two-room apartment. During the interview I heard a daughter begging her mother to take her to the circus, which came from Tbilisi to the city. "Mommy, the circus has arrived, but the ticket costs 7 GEL (ca. 2 EUR), of course, I can take you, but you are not alone, you are three, tell me how much is three times seven, can we pay it for circus tickets, I think it's better if we buy food on this money, isn't it?" (a woman from Chiatura 2018).

6 **City centre:** In the centre of the city, we find a house of culture, museums, the municipal building, the Mining Trust administration, police, market and small or large trades, bank branches, cafés, playgrounds and so on. The layout of the city centre was largely shaped in the 1930s, when the construction of apartments was stepped up in 1933. The standard wooden houses, as well as residential buildings on central streets, and some colony cottages were built. Recreational zones were arranged, as well as a hotel (Chiatura 2008d). Between 1949 to 1955, a major street way laid out (Ninoshvili street), lined with 72 apartment buildings. The construction of the administrative building of "Chiaturmanganum" was completed in 1956, and is, since then being considered as one of the most beautiful buildings in the city (Chiatura 2008a). Shortly after, "Chiaturmanganum" financed the construction of the four-store building of the City Culture House (Chiatura 2008b). There is furthermore the building of the miners' training centre, which was a branch of the Georgian Technical University in Soviet times. "The city [centre] has buildings of Stalinist architecture, and moreover there are

[24] CDF (CFF)- Central Flotation Factory was in this neighborhood.

[25] Pasilok comes from the Russian poselok – settlement – referring to the place where miners were settled.

buildings that are listed as cultural heritage list: the ropeway, the House of Culture, the Trust Building" (Davit, the main architect of the city 2018). Almost all significant buildings are situated in the centre, yet many changed their function: for example, there is a market in the Wedding House today, or a café in the cinema building.

The differences between neighbourhoods point out that the population has differentiated access to resources according to the district they live in and their economic situation. Some neighbourhoods lack access to educational institutions, libraries, shops, pharmacies and even transport, which creates a serious challenges. For example, while travelling by ropeway, I met an old woman, with a 15-year-old blind, orphaned grandson. They live in district 25th where there is no school. Therefore, the grandmother (who also needs a cane to support herself) has to take her grandchild to the city centre every morning and bring him to school, wait outside and take him back.

> *He can't go alone by the ropeway. I understand that no one will open a school for the 10 to 15 children in the district, but if there was a marshrutka, I would seat him here, the driver would bring him to the school, from there I would ask anyone to send him back and I would meet him. I am not strong enough to run after him everywhere; I am not young anymore.* (Interview with Darejan, 78 years old, 2018)

People, living in the suburbs of Chiatura are missing basic amenities, especially the disabled ones. They have to fight for survival, highlighting the challenges posed by the divergence of living conditions in the city's different districts.

4.5 Socialist and post-socialist conditions of the mining sector

4.5.1 Early stages of the development of the mining industry

Before the Soviet period, miners' lives were much more difficult than with the advent of Soviet rule. At the beginning of the 20th century miners reported dire working conditions (Bitsadze 2009). Exploitation was commonplace, regardless of religion and nationality. In miners' opinion, the purpose of capital was to keep the plant running, disregarding the miners' livelihoods (ibid.). Miners worked for 10 to 15 and more hours in semi-flooded mines and dangerous working conditions – such as breaking down manganese rocks underground without proper equipment and protective gear (ibid.). The unbearable working conditions and insufficient payment caused a massive miners strike in 1913. The demands of workers were: eight-hour working days; days off on Sundays and holidays; prohibition of work for children under the age of 15; issuing a labour book[26] for all workers at every workplace; receiving weekly salaries every Saturday; polite treatment; hygienic housing; working hours from 6 a.m. to 4 p.m. incl. a one-hour break, and in winter from 7 a.m. to 4 p.m. with a two-hours break (ibid.).

With the beginning of World War II, most miners joined the army, leaving women to work in the mines. Yet in 1942, it became necessary to mothball the mines for almost two years. In this period, the import of tree trunks used as brace for mine walls stopped, which led to a cut-down of local forests and respective ecological damages (Chiatura 2008d).

4.5.2 Post-WWII development until the collapse of state socialism

No significant changes occurred until the restoration of abandoned open-pit mines. The Institute of Soil Studies was actively involved in the process from the 1960s. The restored lands were returned to agriculture. In 1966, these areas covered 29 hectares, mainly cultivated with grapevine.

[26] Later on, the labour book became a principal document reflecting a person's work experience during the Soviet era.

In the 1980s, 556 hectares more were restored, and 478 hectares returned to agriculture. During this period, the construction of a flotation factory was one of the significant moments – an investment of 12 million roubles. This allowed for a recicling of 108,000 tons of oxide ore concentrates and 120,000 tons of carbonate manganese that were previously flowed into the Kvirila River as a result of washing (Chiatura 2008c).

In this period, the greatest reward for Chiatura Manganese Trust was the Lenin Order in 1966, which it received in recognition of the 6 million tons of ore extracted by that time. 78 miners were awarded prices and medals, and one of them was awarded the title of hero of socialist labour, the second miner on this list. In 1973, a third miner received the title (Chiatura 2008). Being miners was a proud tradition of Chiaturian families, with sons succeeding their fathers in their profession. Working in a place with such a successful development was deemed prestigious. Mining seemed a very honorable profession in the region – from the 1930s until the collapse of the Soviet Union. Young people chose this profession not only for wages (even if salaries were substantial, plus bonuses and a variety of material rewards), but because of the honesty and appreciation that the public was having towards them: media articles honoured their achievements, miners were rewarded and celebrated. Indeed, this was part of a larger state-wide policy, in which publicly expressed different approaches were unacceptable in any area of public life whether it was poetry, painting, the film industry or any other field.

The flourishing era of mining industries came to a halt at the same time when the crisis hit the Union itself. The economic and social crisis of the 1970s and 1980s years in the USSR resulted in deferred or non-existing development and change. Memories, how things used to be and worked before, became one of the most significant factors which lead the Soviet Union to the collapse.

4.5.3 The post-Soviet phase of development

After the collapse of the Soviet Union, the removal of benefits and privileges has caused frustration and resentment among the population. This was one of the main factors of migration. Since 1979, the population of Chiatura has decreased by 51% (Figure 7).

Due to the changing political and legal environment in combination with the market economy, "Chiaturmanganum" was in dire conditions. Privatisation attempts failed, as discussed above, and the situation kept deteriorating. In spite of lay-offs and low, or unpaid salaries, the company retained staff. Of course, this was no relief for workers, and they were continuing demanding the protection of their rights. In this line, the years 1999 to 2000 are important to mention, when miners blocked the railway line requesting salaries. Even if, repeatedly, they stopped the blockade in exchange for promises from the company, these were not fulfilled (Communist 2000b).

> *It was a nightmare here in 2002, there was no workforce in the area and we were hiring people out of other villages, because they had gone away from the municipality because of the lack of jobs, and now it can be said that the workforce is insufficient, not only in our district but also from other regions and cities: Adjara, Tbilisi, etc*. (Akaki 2018)

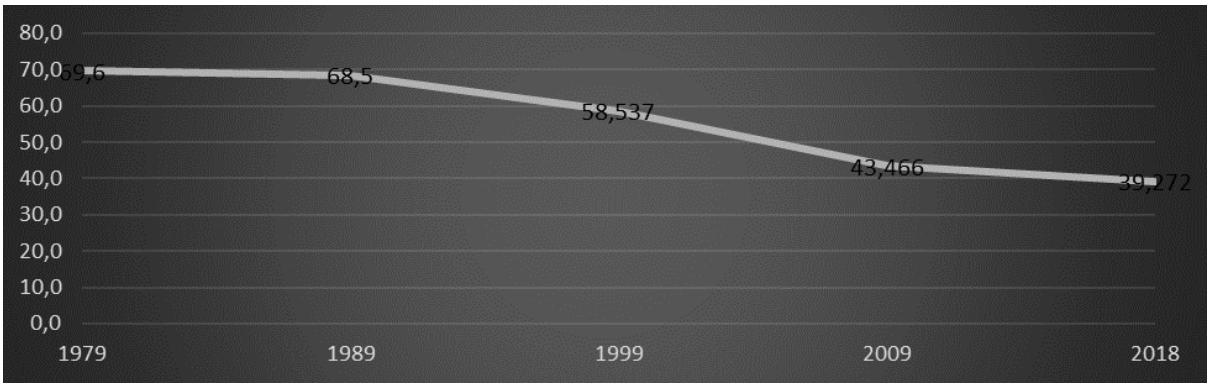

Figure 7: Population in Chiatura Municipality (1979 to 2018), Source: https://www.geostat.ge/ka

A high level of migration had an influence on the working process in the mine. Yet after some time, the migration stopped and working-age people resumed working in Chiatura. In 2008/2009, miners engaged in protest actions requesting salary arrears of past years. For months, they camped in tents near the administration building, and they did not break up because they had no job or better living conditions on the horizon, but to no avail. In 2016, there was no demand for manganese, so the company stopped working for four months, but by that time they had already paid out 60% of salary arrears.

4.5.4 Social and cultural aspects of miners' livelihoods

The socialist period was characterized by a "stick and carrot" approach – a combination of reward and punishment to induce a desired behaviour. Social provisions for miners included high salary, canteens, free transportation, holiday resorts for the whole family, free and high-quality medical care, a high pension from 50 years of age onwards. Besides this, one of the most important rewards for workers was social recognition. Workers were invited to different TV programmes, their photos were printed in newspapers and magazines, they were awarded the title of a "hero of socialist labour" – something to be proud of in the society (Andreoni et al. 2003). In the post-socialist period, however, miners were waiting for their salary for months or years, and were able to get arrears only after strikes. Moreover, salaries were minimal and varied between 70 to 120 GEL (ca. 23 to 40 EUR). Benefits and social protection (health care, transportation, etc.) is no longer available (Communist 2000a).

Most senior citizens feel nostalgic for the Soviet Union. Moreover, there is such a profound positive attitude towards the socialist order that even young people born after the collapse of the Soviet Union speak positively and nostalgically about it.

> *No one was in great difficulties in Soviet times. Now, as I know according to my father and my uncle, we lived well, no one was in trouble [meaning economic hardship], people did not fight. What I see is that in Chiatura everything was done during the Soviet Union. Now, they [meaning government] are doing nothing anymore unless they paint the exterior of the ropeway cabins and buildings.* (Interview with Nika, 20 years old, 2018)

According to Chiatura residents, the main characteristics of the socialist period were that the state was distributing privileges to ordinary people, cared about them, promoted them, rewarded them, and created environmental conditions that were important for comfortable lives – aspects that the retreat of the state after independence has made obsolete, with hardships and responsibilities being socialised on the residents. The state took care about habitat adaptation, and not adaptation to the habitat as it happens now. Residents are convinced that the city's urban development was, back then, a priority of the city government, which heavily invested effort and money. Despite many shortcomings of the Soviet times, the above-mentioned reasons were sufficient to show that

the Soviet period is still being referred to as a wealthy period, even from those people who do not have experienced life in the Soviet Union themselves.

4.6 Economic Survival

There is a widespread legend among Chiatura residents that a German geologist who worked in Chiatura told his grandchildren to go to Chiatura: such a wealth was to be found there, that every resident of the city would have a golden door. A version of the story has reduced golden doors to door handles, yet the meaning remains the same. Residents are convinced that if the company worked rightly, and the money earned by Georgian Manganese were to stay in the city, they would not just have golden handles but golden doors, for sure. Yet the reality is different.

The source of income for the residents of Chiatura municipality does not differ depending on whether you are a city resident or a village resident. Rural residents are employed in the city or in rural mines, while residents of the city may have land plots in the villages and engage in agriculture. The sources of income are almost the same regardless of the place of residence within the municipality. The main sources of income may be grouped as employment in the mining sector public sector, private sector, self-employment/entrepreneurship, and migration.

7,261 citizens are registered at the Social Service Agency database[27], from which 4,580 receive the agency's support. Of these, 2,750 people receive monetary assistance[28], and 2,981 are involved in special health care programs – 19% of the whole population of Chiatura. Residents estimate the economic situation in Chiatura as difficult: they report that their employment is hard to come by, there are no enterprises hiring people, only GM is working, public institutions are down, there is a general problem of employment.

> *It's a big plus that we are an industrial city because we are in a much better position than other regions in terms of employment, as there are about 3,500 people employed with Georgian Manganese, but it is also specific in terms of training, a person of your profession (urbanist) can't find a job in Chiatura, because there is no position which would correspond to your profile. Well, to tell you the truth, no one thinks about hireing people of your specialty.* (Interview with Davit, 48 years old, 2018)

Surely, "Chiaturmanaganume", is a large employer and needs employees with particular skills. Yet anyone who wishes to get another job is largely compelled to search elsewhere. There are employment support programs of the Social Service Agency which do not exclude Chiatura. Applicants can sign up for this support programme, but there is still no evidence that this programme has resulted in any tangible outcomes. Indeed, it is not easy to find a job in Chiatura – even not because there aren't any. Yet finding employment does not necessarily depend on your skills and abilities, neither on previous experience, but on your networks and your role in society. Those conditions put people in an unfair environment and people are aware of it. In the following, we will look into the citizens' income-securing strategies: mining, public sector employment, self-employment, and migration.

4.6.1 Employment in mining

Because of Georgian Manganese, economic conditions in Chiatura seem better than in Georgia in general.

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[27] Social Service Agency has supporting programs for certain families and individuals.

[28] Monetary assistance is determined by the rating scores and is between 30 to 60 GEL (ca. 10 to 20 EUR) per person in a month.

> *The average income in Chiatura may be higher per capita than in other regions. It is calculated by manufactured products (...) but that doesn't mean that there is so much money for everyone to make living conditions so that even a homeowner can afford to paint the exterior of their houses* (Interview with Dato, 44 years old, 2018)

From the point of view of the general director of Chiatura's ore-enrichment combine of Georgian Manganese, the situation is complicated:

> *The miners rest for 15 days. And for their following 15 days of working, they live in a sanatorium, have good and free meals, no need to spend money on anything. Nowadays, we can say that this thing [i.e., the mining activities] is becoming more or less attractive (…) Obviously, salaries are not that high. Miners earn around 1,200 GEL (ca. 400 EUR) during these 15 days, but they also receive food during these 15 days of work. There are those who are relatively talented, and those who are less talented. There are those who receive 1,500 GEL (ca. 500 EUR), or those who receive 1,000 GEL (ca. 323 EUR), etc. In general, they earn about 600 to 700 GEL (ca. 200 to 233 EUR) for other jobs. (…) Of course, everyone wants high wages, all of us want high wages, but the point is that high wages need high raw material costs [i.e., manganese market prices]. The relevant salary for our material price range is around 620 to 600 GEL (ca. 207 to 200 EUR), and when you raise your wages, you have to increase your price tag, too, and so on. In this case, it is already difficult to sell the product.* (Akaki 2018)

When we look at official data and hear from representatives of the municipality and Georgian Manganese, the picture is that everything is better than in the rest of Georgia. However, inhabitants do not confirm the information in private conversations. As they note, the amount of salary may indeed amount to 1,500 to 2,500 GEL (ca. 500 to 833 EUR) according to contracts, but they would receive a maximum of 500 GEL (ca. 170 EUR) in cash. According to the census, the average monthly nominal salary of miners in Georgia is 1,343.5 GEL (ca. 448 EUR) (National Statistics Office of Georgia 2019). They know the reasons for all this but are afraid to protest, as they may even lose their jobs. As for the miners' food, mentioned by the director of GM, it includes sausage or ham, bread, and sour cream or matsoni[29]. One miner said that people often get poisoned by this food, even the bread is stale "I had headache, I was dizzy, and felt weak. I was taken to Sachkhere Hospital and the doctor directly asked me if I was a miner, most miners were like me, because of this food" (miner from Chiatura 2019). He was not the only one who mentioned the dry and low quality food. Residents reported in private talks that they are sorry for miners, not only for their hard work and low salary but also for the food they receive during working days.

While conducting a quantitative study, I visited a displaced family from Abkhazia, the respondent was a surgeon who worked at the Sachkhere Hospital and had two miners (brother and father) in the family. We had an interesting dialog and it turned out that miners are often poisoned indeed, and they are taken mostly in Sachkhere Hospital, as there are only several wards in Chiatura Hospital, so you have to queue up, miners' insurance only covers costs in Zestaponi Hospital, which is 38 km distance from Chiatura, so they prefer Sachkhere Hospital. She actually confirmed what the miner said and added that his father and brother take food from home, so they don't have to get dry food from the mining company. The only thing her father eats from GM food is buns, and he says that mostly they are not new at all. She also points out that even if these foods are not old, it turns out that the employees are on a mono-diet because eating the same foods daily has no nutritional value.

The second important point highlighted by the respondent was the fear of losing a job because of family, even at the expense of sacrificing oneself. The miners care more about jobs than about

[29] Matsoni is a Georgian fermented milk product similar to yoghurt.

their health. The respondent told me that the explosion at the mine injured the worker, she had to amputate his right hand:

> *I was sitting in front of him when he woke up. When he looked at me in the eyes, he realized what had happened, I nodded. He asked me if it was right hand, I nodded again. The tears came down from his eyes and he said: "I have small children and what will happen to me?" I was dilapidated, I couldn't do anything, I understand that he worried about his job and not about his hand.* (Doctor from Chiatura 2018)

Besides the physical hardship of the work in mines, it is risky. Since 2009, there have been 14 fatalities in Chiatura mines that have resulted in casualties. As locals say, there are more cases, but such cases are not being publicized and are being resolved by the agreement between GM and the injured person. Unfortunately, no information is available on the situation before 2009. There is also no statistical information on miners' injuries or casualties during the Soviet period.

Despite major problems in the mining industry, residents still point out that employment is only possible with an acquaintance, it was denied by the director of Georgian Manganese, and mentioned that the majority of place seekers want to sit in cabinets and those who want to work underground are welcome in GM, they will train and employ such kind of people.

All of this means, that despite the population's dependence on Georgian manganese, despite the workers' dissatisfaction with their working conditions it remains the city's main employer and main economic core, because they get everyone, but have their own rules.

> *When I came here, the average age of the workers was 55, and the new age is about 33 to 34. Young people are coming to work, and we get all of them. The main thing is to work, to tell us that they want to work. If they don't break the discipline, we get them. We have strict discipline there and it is difficult to work in the mine. Drinking [meaning alcohol, TK] and smoking (marijuana) are prohibited in mines. There are strict rules.* (Akaki 2018)

The rules are because of a safe working atmosphere, and it means that most men are hired for working in the mines. There is only one miner woman in Chiatura. Akaki also said that there is a widespread opinion that miners have low wages, which he disagrees with. "When you get to the mines you can see what kind of cars [meaning expensive, TK] they [meaning miners, TK] have" (Akaki 2018). According to the director of GM, cars are measuring tools of salary.

For extracting the manganese, sometimes GM has to destroy the private properties of residents, in such cases they give compensation. As locals say, they can only dream about it. They can easily remiss their houses instead of money. As the general director of Chiatura mount-enrichment combine of Georgian Manganese thinks that they give a large amount of money. This is very profitable for GM. When I think about that, I remember the words, I heard in the street. "She is a very lucky person, the manganese was discovered in her yard" (woman in Chiatura 2018). It means that money is the way of survival and both sides know it. They can easily leave houses and move to another place. Some of them stay in Chiatura, trying to buy real estate or start a new business, but according to the residents of Chiatura, most people who took money from GM come from Chiatura, sometimes abroad, but mostly in the capital city. So, we can consider GM as a supporter of migration.

4.6.2 Employment in the public sector

After mining, most people are employed in the public sector. Public service is more prestigious and popular nowadays, even if the salary is much lower than in the private sector in general. Locals have access to the following public sector jobs: schools, kindergartens, libraries, city hall, house of culture and museums. The average monthly salary of employees in the public sector in

Georgia is 861.20 GEL (ca. 287 EUR) (National Statistics Office of Georgia 2019). The public sector is attractive to people, not for their wages, but for their prestige, desirable connections, power, and appreciation. The public sector is seen as more or less stable, most people mostly working there until the government changes, because of their employment through their social capital, which is closely related to political power. The new government rarely keeps the old staff. In Chiatura City Hall we found only one staff appointed during the previous government. According to the Law of Georgia on Public Service, employees are selected for an indefinite period according to open competition. But as a rule, it is mostly fake. There is a widespread public opinion that you need acquaintance to get a job in the public sector. Here I will bring a citation from the interview with a woman from Chiatura, that proves this widespread opinion.

> *I am a conflict specialist by profession, I worked in City Hall during the previous government, then the government changed and I was fired, I was told directly that they didn't need a staff of "Nationals[30]", then my mother had a close friend and she helped me to start a job as a consultant in the store. Soon after that girl [a close friend of her mother, TK] went to Tbilisi, a new manager came and fired me, of course, she would bring her own staff. Then I asked my uncle, he asked for another one, and I started working here. My monthly salary is 250 GEL (ca. 83 EUR), but it is better than nothing. Now my partner runs into maternity leave and says she'll leave her sister-in-law in her place so she won't lose her job, but the girls tell me to be the first and ask my uncle this position for my daughter-in-law because he has a more influential acquaintance than that girl. Now I am searching for someone [who will help her, TK] to return to the City Hall, if I can't, I will leave Georgia.* (Interview with Keti, 32 years old, 2018)

My stay in Chiatura coincided with the elections. Virtually everyone employed in the public sector was working in the ruling party's election headquarters in parallel, it shows a good link between employment and political affiliation.

Due to my regime in Chiatura, I hired a woman to deal with my chores. A few days later she called and told me that she would not be able to come anymore because she was working in the office of the ruling party and because of the second round of elections she was promised an official post if they won the election, so she had to work in an emergency regime and asked me not to be upset. Her behaviour was not surprising, as political parties usually make promises before the election, and this was no exception. The ruling party promised her future employment in the municipality, on the stable leading position. It made her to the rejection of my proposal.

Teaching is also very attractive and popular among the public sector, especially school teaching. This, of course, has its reasons: It is very appealing in the community, especially for women, as it is a "clean", part-time, more or less stable, a prestigious job with an increased salary. There are 4 levels of teachers in Georgia: practitioner, senior, leader and mentor. The teachers confirm their competence with the exam and after each success, they receive salary up to 250 to 560 GEL (ca. 80 to 190 EUR). The plugin depends on the teacher's level and working hours. In addition to the school, teachers have the right and opportunity to teach private lessons, which is their source of additional income. That's why 14% of employed people work in the educational sector. There is a social service agency, and 14 people working there. They have two vacant positions for a long time, but no one wants to work there.

> *Our salaries are not attractive to them, perhaps because of this people do not want to work here, the responsibility is particularly great. We are dealing with such a category of people [meaning people who have economic or health problems and asks to*

[30] Nationals – Short name of United National Movement, an opposition political party, which was the leading party from 2004 to 2012.

get aid from the government] that it is very difficult. Having responsibility and society, which needs fawning, it is a little bit difficult, and maybe because of it they [meaning people, TK] are not attracted to work here. A lawyer's salary is 550 GEL (ca. 183 EUR), and no more, and it's very hard work. The social worker's salary is 650 GEL (ca. 217 EUR), and they have a lot of work. (Natela, director of social service agency 2018).

4.6.3 Employment in the private sector

12.5% of the population of Chiatura is employed in the private sector. The private sector includes the medical field, banking, shops, cafes, etc. As I described earlier the state medical service was well-developed in Chiatura during the Soviet era. However, there is only one private hospital and one private ambulatory in Chiatura, and it causes a number of medical workers, almost 6% of the employed population is in the field of health care. Some of them are employed in nearby cities, and some have managed to make the profession a business. They have their own medical cabinets and do private business. The average salary is about 400 to 500 GEL (ca. 130 to 170 EUR). Here I will bring the citation from the interview with the manager who speaks about the salary in the medical field:

At the moment, my daughter has a salary of 200 GEL (ca. 70 EUR), she is a junior doctor and it will last for the next 4 years until she finishes residency and then she will receive 600 GEL (ca. 200 EUR), of course she can earn much more money, for example, 12,000 GEL (4,000 EUR), but at that time she will be almost 40 years old. (Interview with the manager of the ambulatory 2018)

According to the medical staff, salaries in this field are quite low. It is almost impossible to live with this money, as it is enough only for bread and water.

Another area where locals can find employment is banking and finance. However, there are only a few bank branches in the city and therefore the number of employees is not large. According to residents, employment in the banking and financial sector is considered very prestigious. Salary is also more or less attractive to young people, as it is high compared to other sectors and is about 600 to 700 GEL (ca. 20 to 283 EUR). This amount of money is enough for everyday food, but nothing more.

This is not all, there are small cafes, shops, beauty salons, etc. that are mainly operated by family members, though some people are also hired. I spoke to one of the waitresses of the café who mentioned that she was happy with her job as she had been resting for two weeks and working for two weeks. She could spend a 2-weeks holiday in Tbilisi with her son. Her daily remuneration was 15 GEL (ca. 5 EUR) plus bonuses and her work schedule was from 10 a.m. to 12 p.m. The schedule for shopkeepers, consultants, waiters, and security staff is quite complicated and takes at least 12 hours. Their monthly salary is about 200 to 300 GEL (ca. 70 to 100 EUR).

Working in the private sector requires a great deal of time and effort. The roughly 12-hour tense work schedule, frequent weekend work, is quite difficult, and there is a very low salary, which makes it less desirable to work in the private sector than in the public sector.

4.6.4 Self-employment and entrepreneurship

After the collapse of the Soviet Union, people lost their jobs, even if they kept their working places, the salary was so low, that they had to look for another source of income. The state is not the only and even not the main employer anymore. The private and public sectors employ only a small number of people in Chiatura. If a person is not employed in GM, in public or private sectors he/she must either be employed in the trade or determine another source of income. Unlike the Soviet era, they now have the ability to have their own property and use it for income. Almost 60%

of the population has at least a small plot (ca. 800 sq.m.) of land in Chiatura district, mostly in the villages. People became entrepreneurs some opened stores, some small pharmacies, some started farming and etc. There is only small entrepreneurship like cafes, shops, bakeries and etc. in Chiatura. Residents of the city have farms in nearby villages and because of the state programs, owners of lands decided to make farms. There are Entrepreneurship Support Programs in Georgia. For example, Georgian Tea Plantation Rehabilitation Program, Program of Agro-production Promotion, Sub-component of Berry crops financing, etc. State-sponsored projects have been a push for some entrepreneurs. While living in Chiatura, I met some of them: the owner of the tea plantation, the owner of the flower plantation, the owner of the fish farm, the owner of the dime store and people involved in private extraction of manganese.

While being in Chiatura we visited a flower farm owned by a young farmer George. He is 24 years old and after the death of his father, he took on a farm of his father. He is a student, and as he said, he is a little magnate of the village, because when someone sells land, he buys it. Also, he owns the only shop in the village. At first, they decided to make a farm on 3 acres of land, then they slowly expanded. They bring various varieties from abroad, and also make hybrid varieties themselves. In addition to flowers, they have dwarf and ornamental plants on the farm. The farm employs 3 people at a time, and a few more are needed seasonally. The farm supplies flowers to the capital and other big cities flower markets. Avto plans to expand its business in the field of agro-tourism. As he says he would set up several cottages and holidaymakers will have to handcuff cows, bake bread etc. Otherwise, they would have to pay 10 times more for the products, as the only shop in the village is in his ownership and he would regulate the prices himself.

Some of the locals have fish farms, the most popular species is trout. They have these farms in their yards outside the city. I met Zurab, the owner of the fish farm. Before the making farm, he was working in Tbilisi, was a deputy director of the public school, but then he lost a job and decided to return, fulfil his father's dream, and make the fish farm. He started his business five years ago, then he realized that a fish farm was a good idea, but it is only seasonal. Because of this, he decided to breed turkeys. The neighbour's dog ate about 30 turkeys and now he has about 100 ones. He is going to sell them for Christmas and New Year.

According to the owner of the tea plantation, tea-growing was widely spread in Chiatura during the soviet time. The tea was planted on 200 hectares of land, from which 80 hectares have already been restored. There are 60 families employed to care and pick tea, though the owner plans to expand the farm and employ up to 1,500 families in total. "Our tea, in Korea, was on the exhibition, in South Korea and was awarded a gold medal" (Tariel, the owner of the tea farm 2018). After this exhibition, the Czech Republic purchased 5.5 tons of ready products. "The population is satisfied with it, we give money to our employees for picking the tea leafs every evening, about 25 to 30 GEL (ca. 8 to 10 EUR) for each picker every day" (Tariel, the owner of the tea farm 2018).

Nowadays, tourism is one of the ways of self-preservation. However, citizens admit that despite the inadequate infrastructure for tourism, tourists often come to Chiatura, because there are a lot of interesting sightseeing opportunities in the district. One respondent also points out that Chiatura would be a good example of what a city should not be. Locals say that Chiatura is an impasse and no one can accidentally get here. Last year most of the guests come there only for manganese and ropeways. They admit that about 20 tourists couldn't find accommodation, because of the lack of hotels, hostels, and guesthouses. So, locals began renting rooms, which brings additional income for them.

Everyone is trying to earn extra money as it is possible in Chiatura. Coming to Chiatura Theater to buy tickets, I was told that the performance could only be attended by invitations, which they sent to the official establishments, and if anyone allowed me, I would be able to attend the performance. I was told the same thing about the concert. I started searching for tickets. The other day, during an interview at GM, I accidentally heard the dialogue. The assistant director distributed concert tickets to department heads and allowed them to dispense tickets among their employees. That

evening I bought tickets from one of the department's heads. This example illustrates that people with certain privileges, who have a prestigious position and a high salary, sell tickets for their employees in order to gain extra money. Everyone knows and no one is protesting this. Moreover, when there were no more tickets at the box office, citizens told me several names from GM and municipality, who were selling them and all these people were heads of some departments.

4.6.5 Migration

Among the reasons of migration, the most spread one is labour/economic migration, that's why migration can be considered as one of the sources of income for the residents of Chiatura. 17.7% of Chiatura population is in migration. In private conversations, however, locals consider migrants only members of their families who have gone abroad. Migrant sex is almost equal, with only 5% more female migration and 72% of migrants are in the working-age. The leading countries are Russia and Turkey. Based on the quantitative research conducted in November 2018 by me, we can say that most of the migrants left for Russia and Ukraine are male and left the country shortly after the collapse of the Soviet Union, and most of the migrants in Turkey, Italy, Greece, and Cyprus are female and left the country in the late 2000s. Most of the migrants left for Germany are students.

As I have already mentioned, migration is not a source of income as most migrants provide material support to their families, but it is surprising that only 38.3% of the migrants' families admit to sending money, and 56.7% deny any material support. All this has its reason. I mentioned above the social programs which provide social aid for the citizens of Georgia, which means that if such a family receives any kind of income, the financial assistance will be cancelled, so the people involved in the program try not to show any type of income. However, this does not exclude that there were indeed migrants who did not provide any form of support to their families. For example, Eteri[31] Grandma (a neighbor more than 80 years old) told me that she had lost two children, a girl was buried in Chiatura, but the boy went to Russia during the Soviet era, at first, he had called his mom every week, and then disappeared almost 15 years ago. Mom thought that he was dead. However, one day, Grandma's son suddenly appeared, coming for a few days to change some documents. I have personally witnessed this story, perhaps Ether's son was an exception.

The high level of labour migration in and of itself indicates that more and more people are considering alternative sources of income.

I have discussed the main areas of employment in Chiatura above. As it turns out, despite low wages, it is important to seek employment in "prestigious" and permanent positions, even though you may be able to get higher pay elsewhere and all of these positions need to have acquaintances to get a job. Otherwise, you have to start your own business and invest all your energy, finances and labour. Some may think that self-employment may be an alternative to mine employment, or moreover, some believe that self-employment is an alternative way of the city economy, but it's not so. When I talked to locals about the alternative economy, most of them told me that they still see the alternative in mining. Alternatives to the exhaustion of manganese stock are seen in marble and then in gold mining. Yes, it is true, that there are several huge and great farms in the district, but these are unique cases and of course it is more income-generating than the other types of employment. However, the income of most self-employed persons is not significantly different from the people employed in other fields. I spoke to the shop owner who turned out to be a former miner. He told me that the income was almost the same, so he gave up working in the mine and opened the shop. Now he has a lot of free periods of time, and the work is neither depressing, nor too tiring, and especially not dangerous. Not surprisingly, there are people of all ages and genders

[31] Eteri is the name of Georgian women.

in self-employment, who has certain knowledge of the field in which they work. In private conversations, part of the population said that they would be happy to start a business, though it's impossible because of the lack of the needed capital at the moment.

Although self-employment is a simple source of income for someone, it must be admitted that in the main it requires knowledge and some financial capital. That is why self-employment can become an alternative to the city's economy in the future.

4.7 Conclusion

As was pointed out in the very beginning of this paper, the research is valuable as it gives a perspective of survival of the mining cities in transition from one socialist period to another post-socialist period of its existence. While going deep into several dimensions of peoples' social life the methods used for this study were sufficient enough to jump into some conclusions.

The paper shows the development of the mining industry, infrastructure, and social conditions during the soviet era. The fact that Chiatura became an important mining centre became a precondition for development in the city. The government took care of general, working, housing and other types of conditions. People were getting perks for their job, which was a kind of motivation for them to fulfil their duties. Despite the fact that people were doing dangerous jobs, they still have emotional sentiments about this period of their life and talk about it in a more positive framework than in a negative one.

In the post-soviet period, the importance or at least the function of the city has not changed, rather the main working place for locals has changed. Even though all the followings are true, the attitude towards working conditions, or reconstructional works or social well-being there is less attention paid than in socialist reality. In this regard, people complain about poor living standards in general and dangerous working conditions at work and this is when almost half of the working force of this city is involved in the mining. Moreover, the relationship between local government and GM stays behind the public eye. There is no clear evidence of how much contribution is in local budget of this company and how these finances are spent and what kind of responsibility GM has towards the city. As a result, people are upset that their work is not appreciated and paid accordingly, which causes either self-employment or entrepreneurship or migration and the process of emptying the city from working force.

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5 Surviving strategies under extreme conditions. Infrastructural effects of post-mining decline in Shurab

Carina Schweikart and Dilshod Olimov

5.1 Introduction

Water supply for the population is one of the priority tasks of the government of the Republic of Tajikistan. Although Tajikistan is a country with very large water reserves, most of the population of the country suffers from absence or shortage of irrigation and drinking water (UNDP 2014). In the last two decades, Tajikistan's authorities took repeatedly the initiative to draw attention to the water shortage at both, at global level and national level. They launched several working programmes such as the "Year of Fresh Water" in 2003, the "Water for life" decade (2005 to 2015) and the programme "Water for a Sustainable Development" from 2018 to 2028 (WSDCONF 2018). Water supply is still one of the most pressing issues nowadays – especially in the rural regions (USAID 2019). One of the settlements of Tajikistan which are extremely suffering from shortage of water is Shurab (GIZ 2014; TAJINFO 2019).[32] This town is located in the southeast of the Isfara district in Tajikistan, at the southern edge of the Ferghana valley, close to the Kyrgyzstani border. Due to its rich coal deposits, Shurab developed during the Soviet Union to a monoindustrial town; an important site to extract raw material for the energy supply of the State (Abdolvand et al. 2015). With the collapse of the USSR and its economy, the formerly prospering coal mining city also decayed (Murzakulova and Mestre 2016).

Energy and water supply were centrally organized in the Soviet era, resulting in supply systems that were built across today's national borders. With the dissolution of the Soviet Union, not only the economy but also the supply of water for the population and agriculture etc. had to be rearranged (Abdolvand et al. 2015). This led to conflicts which continue to this day and particularly affect border towns such as Shurab (Matveeva 2017). Moreover, coal extraction relies on the use of water. Large amounts of water are directed to the surface during the process of mining to facilitate resource extraction. In addition, the drainage water often contains environmentally harmful substances such as heavy metals. Thus, not only a lot of water is consumed, but also contaminated by wastewater leakage and the mining waste dumps (Tiwary 2001). All these aspects show the high interdependence of the factors water, coal mining and the social, ecological, and economic situation of the population.

So far, several studies have examined the rise and decline of mono-industrial cities in post-Soviet states (e.g., Gentile and Tammaru 2006; Printsman 2010; Rowland 2013). Furthermore, water supply problems in the Isfara region or in the Ferghana valley were investigated from different perspectives. However, they were mainly analysed from the point of view of development aid from nongovernmental organizations (e.g., GIZ 2014; Kuzmits 2006) or conflict prevention between neighbouring states and trans-boundary politics (e.g. Bichsel 2009; Matveeva 2017; Pak et al. 2014). Until now, research which takes into account the post social transformation of the city, the interdependencies between water, mining and living conditions and thereby focussing on the coping strategies of the local population is lacking.

5.2 Research aim

Considering the economic, social, and political background of Shurab as a monoindustrial town in the Soviet Union and its post-socialist transformation, this working paper aims to analyse and

[32] There are many other cities and villages in Tajikistan which are affected by water scarcity, e.g., Somoniyon in Isfara district, Mirzorovot in Bobojon Ghafurov district, Shakarchashma in Matcho district.

assess the major factors of water supply risks in Shurab, and the interrelations of these factors and tendencies. In addition, changes of the situation in comparison to previous years will be examined. Based on this framework, the main goal is to explore existing survival strategies of the inhabitants and potential solutions for a sustainable supply of Shurab's inhabitants with drinking and irrigation water. Thereby, the understanding of processes in post-Soviet mono-industrial towns which are affected by water shortage will be deepened and prospects for the local administrative compiled. This paper thus contributes to stopping the destructive tendencies in the short term and to finding a sustainable development path for Shurab in the long term.

In summary, the main questions we address in this working paper are:

- How did the post-socialist transformation affect the life in mining towns in general, and particularly in Shurab?
- What are the main reasons for the lack of water in Shurab?
- What management strategy is used by the city government regarding a solution of water shortage?
- Are there any prospects for a water supply solution?
- What resources are there in Shurab which became or could become an alternative source of water supply for the citizens?

5.3 Research methodology

To answer these research questions, we have made use of a mix of quantitative and qualitative methods. In a several-month field study from October 2018 until January 2019 household surveys were carried out as well as in depth-interviews with local experts, inhabitants, and representatives of the local administration. The former were conducted with 100 residents of Shurab, which were chosen randomly from the households. Since Shurab is a very small settlement – approx. 4,000 inhabitants – the households were chosen by random walking. The surveys were analysed using SPSS. The interviews were carried out for about one hour and evaluated with MaxQDA. This paper will mostly focus on the evaluation of qualitative data. Nevertheless, quantitative data will be used to complement the results.

In the following, we first provide an overview of Shurab's historical development as a mining town. In doing so, we discuss important characteristics and development patterns of mining towns, involving theoretical foundations, while subsequently presenting main research result. These include an analysis of the current situation in Shurab, current local political approaches as well as the strategies and views of the inhabitants. Finally, a conclusion is drawn which summarizes the results and contains suggestions for further research.

5.4 Shurab – a city determined by its coal industry

The coal deposits of Shurab are the second largest coal reserves in Tajikistan (Abdurahimov and Okhunov 2011). Until today Shurab retains the deepest coal mine of Tajikistan (Murzakulova and Mestre 2016). Already since the early Middle Ages coal mining existed in the area, which is known today as the Isfara region. This is known by recordings of Arab geographers and historians of the Golden Age of Islam. For example, one of the most known Arab scientists Al-Istakhri travelled through Central Asia in the last part of the 10th century, and mentioned the coalfields of Isfara in his writings. He pointed out that this mountain is a collateral stone, and is burning as coal (as cited in Ghafurov 1989, p.62). Also, Al-Istakhri and another Arab scientist, Ibn Hawqal, reported on the Isfara mountains and the stone coal mining there (there is only brown coal in Shurab): "a mountain of black stones that burn like charcoal; ash serves to whiten clothes" (Al-Isthakri, 334 as cited in Bartold 1963, p.217). Yefimova, a descendant of mine workers and research associate noted that before USSR the coal fields of Shurab were in the hands of local businessmen. An interviewed

resident (Interview with A. Saidov 2018) confirmed this and added that the first capitalists arrived in Shurab in 1887 and that they themselves became investors in 1895.

At the end of the 19th century and at the beginning of the 20th century, there were considerable changes in the economy of the Isfara region, particularly, in the field of coal mining. Coal mining in Shurab profited from investments by Russian capitalists since 1900, which led to a sharp increase in production (VATANAM 2007). The manual exploitation of the coal deposits of Shurab began in 1901 (Abdurahimov and Okhunov 2011). If the output was 500,000 pood (1 pood equals 16,38 kg) in 1880, in 1903 it was more than one million pood.

Since the beginning of coal mine activities there lived people of various nationalities. In the time of the Soviet Union Shurab's population consisted of more than 40 different nationalities. Many Russians, Ukrainians, Tatars, Kazakhs, Germans, and other people of Central Asia lived there, but very few Tajiks at the time.

In 1900 there were already 640 professional workers on the coal fields of Shurab. The first workers came from poor regions in the mountains, where they could not find employment and thus were forced to work in the severe conditions in the coal mines. For example, it is documented from the Badakhshan region that several labourers worked in the mines. It has been handed down that the miners lived on small land plots, for which they had to pay rent. Three workers worked in one cellar of three meters height and two meters length. The working conditions were awful. They worked daily from 13 to 17 hours and received only 30 to 40 kopecks. Moreover, there was no drinking water available. Water was brought 12 km from the place of work by a chariot and each worker was given only one bucket of water for the whole day. Often workers faced serious diseases due to the lack of appropriate hygiene. In addition, food shortage was commonplace. All these led to disagreements of coal workers with the managers.

Although Shurab as a settlement was already heavily dependent on mining activities, the development of its mining industry in the planned market economy of the USSR continued from 1950 onwards turned Shurab finally in a monoindustrial city, a so-called *monogorod* (Rasul-Sade 2010). *Monogorods* are towns in which one core industry is functioning as a major employer. Thereby, the ties between the function of the company and the economic and social aspects of life in the city are so close that the development of the city is interrogated with the rise and fall of this single industry (Gureeva 2011; Molodikova and Makhrova 2007). In other words, the domination of the single industry causes the social and economic situation of the city and its inhabitants to be entirely dependent on it (Shastitko and Fakhitova 2015). As other *monogorods* in the Soviet Union the development of Shurab was coordinated directly by Moscow, while the city profited from a special consideration of industrial locations by the Moscow provision system. It had a "specially privileged" status within the USSR planning economy, and thus had well-developed infrastructures and a high-living standard (Rasul-Sade 2010).

"Shurab was a paradise corner in Tajikistan", as an inhabitant told (Interview with A. Niyazova 2018). Shurab was considered a well-equipped city with good living conditions and a relatively high standard of living. There were many social and medical institutions as shops, clubs, cinemas, theaters, a park of culture and recreation, schools, kindergartens, a day nursery, a first-aid medical station and a post office.

During the Soviet period, the mining company employed over 3,000 people (Yunusova 2012), and the degree of automatisation was very high. Two mines were in operation, Shurab 1 and Shurab 2, which had a total capacity of about one million tons per year (Abdurahimov and Okhunov 2011). The mines worked in three shifts, with up to thousand miners in each. A railroad served to transport the raw material to different locations, mostly to the Ferghana central heating plant in neighbouring Uzbekistan, where the coal was burnt for heat and electricity production (VATANAM 2007). In the 1980s, more than 15,000 people lived in Shurab (Rasul-Sade 2010). In 1978,

10 million tons of coal were extracted from the mine. At the end of the 1970s and the early 1980s, miners' salaries increased, leading Shurab's inhabitants to buy cars and build private houses.

Until 1991 the most developed deposit in the republic was the Shurab's lignite coal mine, but the dissolution of the Soviet Union and the transition from a planned socialist economy to a market economy resulted in a sharp decline. The Tajik civil war from 1992 until 1997 led the North of the country largely untouched, yet contributed to a deep economic crisis and the harsh decline in production. The dimensions of the decline are apparent from the figures of production: From 1991 to 2000 coal production decreased from 500,000 tons to 20,000 tons per year. After the collapse of the USSR, the operating deep horizons of the mines were flooded. Presently, the still ongoing production carried out on the upper horizons of the mines (Abdurahimov and Okhunov 2011).

Nowadays the mining company "Angisht OJSC" is operating on the coal fields of Shurab (Abdurahimov and Okhunov 2011). The Open Joint Stock Company "Angisht" is a state company. Most of the work is, again, performed manually, all while the number of employees sank to 402 in 2012 (Yunusova 2012). Working conditions deteriorated and the salary – once good in the Soviet Union (Frantz 2000) – only reached 514 Somoni in 2012 (ca. 80 EUR, as of 2012) (Yunusova 2012). The formerly prosperous towns experienced a great population loss: the number of inhabitants today approximately reaches only 4,000 inhabitants. In 2015, Shurab lost its official town status, and was downgraded to a *jamoat;* a village-level administration unit subordinated to Isfara district authorities (Murzakulova and Mestre 2016).

However, there are prospects for a revitalisation of the coal mines. In October 2013, the government of Tajikistan and the Malaysian company "HOS International Trading SDN BHD" signed an agreement on the implementation of a governmental decree, enabling the construction of a Central Heating Power Plant in Shurab. The Malaysian company plans to implement the construction of the Heating Electro Station (HES) in Tajikistan in consortium with Chinese companies. In 2017, representatives of the Malaysian company visited Shurab to consult on coal deposits and the construction of the HES. The project will incur direct investments of 400 million dollars in the Isfara district and provide 300 MW of power. The HOS International Trading SDN BHD company will use the coal field within 30 years (Azernews 2018). The realization of the electric power produced will be carried out through the state energy holding Barqi Tojik.

5.5 Urban infrastructures

After the collapse of the USSR most of the diverse infrastructural facilities either disappeared or were moved to other regions. This is similar to the development of other mono-industrial cities and is a specific feature (Gentile 2003). Nowadays, the inhabitants suffer from a lack of utilities, educational and leisure facilities. There are only two schools (one Russian school and one Tajik school), a kindergarten, a music school, a hospital, and an orphanage house. Generally, the housings and roads in Shurab are in a bad condition. Urgently necessary repairs and constructions cannot be carried out due to the lack of financial means by the citizens as well as the town administration.

From formerly three secondary schools, only two schools remain, but operate only partially. During the Soviet Union there were Russian, Tajik, and Kyrgyz schools, but only Russian and Tajik schools work at this moment. In the 80s, 1,200 to 1,500 students were taught in these schools, but now 500 students are studying, and the Kyrgyz school was closed and the building is completely destroyed. There is only one medical facility, which is also in a state of emergency. Furthermore, the sanitary and hygienic condition of the hospital and educational institutions do not meet the requirements. It is interesting to note that the respondents complained about the poor condition of the hospital in the interviews, but in the questionnaire they rated the medical care as in order (see the chapter on the survey in this volume). This can probably be explained by the fact that there is an ambulance hospital in Shurab, which is an excellent feature compared to other settle-

ments of the same size. Nevertheless, hygienic conditions depend on the current system of utilization and sewerage of municipal waste. The situation is aggravated due to a broken heating network. In addition to the fact that most residents of Shurab experience problems with heating their homes, in public institutions such as hospitals and educational institutions, there is no heating even in the frosty winter months. All these problems foster the spread of diseases and infections in the settlement. Sufficiently available water is very important in the fight against and prevention of diseases and the lack of drinking water is a serious factor for poor health conditions (WHO 2019).

After the collapse of the Soviet Union for the residents of Kyrgyz and Tajik villages, who lost workplaces in the decaying industrial enterprises, subsistence farming became the main source of income and ensured the survival of the inhabitants – as it did in other post-soviet mining cities (Molodikova and Makhrova 2007). Beside the limited opportunities and restrictions of the population due to inadequate infrastructural facilities and the poor and weak economic situation, it became clear in the interviews that the residents also suffer from the loss of importance of the city. The city was one of the prosperous towns of the Soviet Union and one of the most important industrial centers of Tajikistan, and residents of the entire Sughd region visited this area for the acquisition of goods (Interview with A. Gafforov 2018).

Looking at the state of housing infrastructure, we have to distinguish between two kinds of houses in Shurab: state-owned and privatized ones. Both are generally in a bad condition. Some inhabitants started to sell windows, doors etc. of abandoned houses to gain money for living. Since 2010, the government began to resettle inhabitants of densely populated regions to Shurab and provided them with apartments there. However, most resettled families returned to their former place of living after a short while because of the lack of drinking water and working opportunities in Shurab (Rasul-Sade 2010).

Another problem is that not all residents of the settlement are officially registered in their homes. For example, one inhabitant claimed that she was not registered in the house of her husband after her marriage (Interview with D. Birukhsat 2019). Therefore, she has no rights for accommodation in her house. When employees of the department of internal affairs come for survey or to check the houses, she goes away together with her children to hide herself. In addition, the interviewee cannot work abroad or in Isfara, because she has no certificate of residence.

Finally, the conduction of the interviews revealed that the lack of affordable and appropriate accommodations raises the number of homeless people and – as one consequence of many – increases prostitution in downtown.

5.6 Shurab's water supply

There are two water-carrying pipelines passing through Shurab. One, the "Surkh-Shurab" pipeline is a pressure water pipeline built in the 1930s. It has not been in operation since 1993, because the broken pumps and drainage systems haven't been repaired until today. Shurab's drinking water comes from the second pipeline, the "Shurab-Vorukh" water pipeline, which was constructed in 1969 (VATANAM 2007). The pipeline, starting in the Tajik exclave of Vorukh, is passing through the villages of Ak-Sai, Ak-Tatyr, Janybak and Samarkandyk in Kyrgyzstan before reaching the settlements of Khudjai Alo and Shurab on the Tajik side of the border (Rasul- Sade 2010). Out its 32 km, 17 km pass through Kyrgyzstani territory, and nearly half of the pipeline course passes across densely populated places (VATANAM 2007). The system has two gravity filters; one is at the water intake, which is located in Vorukh. The other one is the settlement of Shurab itself (GIZ 2014). Due to its cross-border course and the generally weak role of local institutions in Tajikistan (Abdolvand et al. 2015), there is a lack of institutional oversight for the rehabilitation and maintenance of the pipeline. In the USSR, the development focus of Shurab was entirely based on its function as a mining town. This is why irrigation systems or canals were never built in Shurab to enable

agriculture – unlike in other settlements in the fertile Ferghana valley (Murzakulova and Mestre 2016).

Moreover, it is known that there is a conflict between Tajiks and Kyrgyz about land and water matters in Vorukh (see Toktomushev 2018). The president of Tajikistan Emomali Rahmon held negotiations in Vorukh and Aksai with the purpose of elimination of these problems with the president of Kyrgyzstan (Radio Liberty 2019).

The supply of Shurab's inhabitants with water is entirely dependent on the Vorukh-Shurab water pipeline. The tube is in a very bad condition and loses water through holes, although there are repairs made occasionally (Matveeva 2017). Estimates are that the pipeline is damaged on up to 70% of its course (GIZ 2014). Indeed, the UNDP (2014) noted that in Tajikistan, poor technical condition of pumping stations and inefficient irrigation systems are the main factors for the lack of water in the population. In addition, people living close to the pipeline on its route through Kyrgyz and Tajik territory are making holes in the pipeline to withdrawal water illegally (Murzakulova and Mestre 2016) – often to irrigate farmlands (GIZ 2014). Bichsel (2009) identified power geographies between upstream and downstream actors regarding the allocation of water resources. In this case the upstream living Kyrgyz population have better access towards the resource water, while the downstream living Tajik don't receive enough (Matveeva 2017). In the interviews as well as in the survey it became clear that the water scarcity represents the most acute problem of Shurab's inhabitants (Interviews with citizens: D. Birukhsat 2019, A. Gafforov 2018, Q. Davlatov 2018 and others).

New sources of water are necessary for agricultural activities. Locals who live along the pipeline route – without having alternatives – began to tap water illegally to irrigate their farmlands. Although the water route should provide hundreds of Tajik and Kyrgyz households with water, it actually cannot deliver water to most of the Tajik settlements. Particularly after the spring meltwaters have passed, residents experience an acute shortage of both irrigation and drinking water. As a consequence, the already poor residents of Shurab have to buy water from water trucks coming into the city, whereby many spend up to half of their income on water purchase (Interview with S. Urboeva 2019). Alternatively, residents are forced to go for many kilometers to a well and spend hours to do the way there and back.

For more than 20 years, there are disputes about the use of water of the Vorukh-Shurab pipeline between the region's Tajik and Kyrgyz communities. The situation causes discontent in the local population and increases social and ethnic tensions between different parties. The need of water leads to conflicts between the inhabitants of Shurab and Khujai Alo on the one side, and villagers on the Kyrgyzstani side of the border. Local authorities are forced to constantly work with the villagers along the water route, to prevent illegal tapping and ensure the delivery of water to all parties (Interview with D. Bifotima, former deputy mayor of the village of Shurab, 2019). The main argument of both, Tajik and Kyrgyz is that they are people too and need water to live., According to an interviewee, the local authorities of the two countries initially agreed on the use of water, but then the residents of Ak-sai violated the agreement (Interview with H. Abdurazzok, 10.11.2019). Attempts of both, Kyrgyz and Tajik local authorities, to fight against unauthorised water withdrawals did, however, not bring about a successful solution. In combination with periodically conducted joint raids of state representatives in order to eliminate unauthorized water withdrawals, more effective measures can be taken at the level of local government and communities (Interview with S. Niyoz, Chief Physician of the Hospital Shurab, 2019). Recently, local communities – through negotiation and explanatory works with the population – managed to agree on a common schedule for Shurab's inhabitants to fill up the necessary amount of water in tanks at certain times of the day. Hasanov Abdurazzok think that, given the circumstances, it is the most acceptable and a less conflict-prone solution on the short term. Clearly, it is impossible to improve the situation without increased efforts to combat illegal water withdrawal. Other options which could improve the water supply of Shurab in the long term require significant investments.

The first option would involve the construction of a new water supply route. According to the chairman of Isfara district (Interview with S. Sidzhouddin, chairman of Isfara city, 2018), plans exist to construct an independent 75 km long water supply worth 3.5 million Somoni (320,000 EUR, as of 2018), which will pass only through Tajik territory. The second option involves the restoration and reconstruction of the pumping station located in the village of Surkh ("Surkh-Shurab pipeline") – which is also the preferred option of the Isfara district administration (Interview with S. Sidzhouddin, chairman of Isfara city, 2018). The Surkh-Shurab pipeline reconstruction is part of the government development program of Shurab. The third option, voiced in 2015 to 2016, envisions to construct a water reservoir and two big pools with intensive engines from the Isfara River in Chorkishlak area. However, this project was left unfinished. Local authorities did not provide any further information despite repeated requests. Interview partners assumed that most likely the "money was spent fully that's why they cannot finish the project" (Interview with miner O. Alisher, 2018). Finally, there is a need to revisit the inefficient use of water, especially regarding irrigation canals for agriculture. However, this requires additional negotiations with the Kyrgyzstan side.

Effectively, irrigation agriculture consumes extremely large amounts of water – globally seen it is the strongest consumer of water[33] – and due to the poor conditions of the drainage systems, the Isfara region's consumption is particularly high (GIZ 2014). Also, agriculture is only possible in the region because of irrigation systems. The arid climate requires an irrigation system in order to cultivate plants (UNECE 2011). Interlocutors from both the Kyrgyz and Tajik sides noted that every year, irrigated land is expanding, and with it the amount of illegally tapped water from the "Vorukh-Shurab" pipeline. On one hand, the expansion of irrigated agriculture puts more pressure on the already scarce water resources. The usage of drinking water for irrigation purposes even appears as a waste of resources. On the other hand, subsistence agriculture and the raise of livestock secures the food supply of the population and thus its survival. Moreover, food production for market sales is seen as an option for economic development due to the generally fertile soils and therefore decent outputs, once irrigated (VATANAM 2007). However, because of the general water scarcity, the farmlands are degrading to salt marshes, and the village pastures are subject to drought (Murzakulova and Mestre 2016). This is a major environmental problem – all since the process of salinization is difficult to stop.

5.7 Labour migration

Labour migration is another crucial issue, when analysing post-mining survival strategies in Shurab. After the disintegration of the Soviet Union migration was mostly driven by cultural and ethnic motivations in Tajikistan (Murakami et al. 2019). Many non-titular nationalities left due to the breakoff of the economic relations, the beginning of the civil war and the new freedom of movement.[34] Interviewees stated that Shurab was a very international city. Nowadays, there are only 150 Russians and 1,100 Kyrgyz left (Rasul-Sade 2010). However, especially mono-functional cities in post-Soviet states were affected by an outflow of qualified labour (Clarke 2007). But at the moment, around 4,000 people live in Shurab, most of them are Tajiks. The single city-forming enterprises' uncompetitiveness and loss of retail markets led to the fact that the city's main employer and guarantor of a certain prosperity no longer fulfilled these functions. Many lost their jobs and/or left to seek better employment in other republics or towns (Murzakulova and Mestre 2016). Inhabitants estimate that Shurab lost around 80% of its population since 1992. As a result of the enormous emigration, mainly very poor people remained in Shurab who could not afford out-migration.

[33] According to the OECD (2018), irrigated agriculture accounts for 70% of the global water abstraction.

[34] In the Soviet Union the freedom to move was limited in certain areas (s. Gentile 2003).

Nowadays, emigration is still very present for the inhabitants, according to the interviewees, whereby the survey data supports this impression: 27% of the inhabitants of Shurab have at least one family member in a foreign country. In Shurab especially the young generation is leaving the region and searching elsewhere for a job. In the case of Shurab, the massive outflow of inhabitants due to the lack of economic prospects is exacerbated by the inadequate water supply. According to the interviewees, this is an important reason for migration: "The people do not trust anymore in Shurab's water supply and therefore leave" (Interview with M. Holbekova 2018). However, it became evident in the in-depth interviews that some inhabitants reject the possibility to leave Shurab due to emotional boundaries they have with the settlements. They defy the bad living conditions because Shurab is the "place of their ancestors" (Interview with A. Niyazova 2018). In this respect, place attachment is a factor which impedes the decision to choose migration as a survival strategy.

Remittances of the emigrants are crucial for the economy of Tajikistan. In 2018, they have constituted 31% of the country's GDP (World Bank 2019). According to the survey data, 87.5% of the households with one family member working and living abroad receive remittances. This high amount of remittances shows that the departure of one family member is also used to provide money to the rest of the family, ensuring financial security and thus serves as a survival strategy. This survival strategy is highly dependent on the economic situation of immigration states. For example, remittances to Tajikistan decreased significantly during the economic crisis in Russia; a popular immigration destination (Murakami et al. 2019). The extent to which this crisis effected Shurab's population and the vulnerability of this survival strategy in general in Shurab requires further investigation.

The high level of labour migration goes along with dire working conditions for the remaining population – in mining settings and elsewhere. Apart the state-owned Angisht OJSC mining company, there are also small private mines, which operate on a licence basis. The main work force at these mines are day labourers, the so-called *mardikor.* The word "mardikor" consists of two roots – "man" and "work" – and refers mostly to a person which is dependent on labouring. Mine owners and mardikors conclude an oral agreement only for one working day. Labourers work from 8 – 17 o'clock, 9 hours a day. If the work is performed before the pre-defined working period, the employer has the right to give command for other works in the remaining time. The main problem is that the work of a mardikor is not official. Hence, they don't pay taxes and working regulations for safety or health are not respected. On top of that, even children labour is made use of. The employees search for qualified workers at the so-called "mardikor-bozor". At 6 o'clock in the morning, employers select workers on the bazaar and bring them to their mines. The conducted works and the conditions of work are very hard, whereby the employees prefer to hire male workers. Women are more likely recruited during seasonal work peaks. The salary between men and women differs, too. For men it is from 40 to 100 Somoni (3,50 to 9 EUR, as of 2018) per day, whereas women earn from 20 to 50 Somoni (1.80 to 4.50 EUR) per day. Besides, they have to pay for the road fare which is from 3 to 10 Somoni (0,25 to 1 EUR). As there are no other employment opportunities, the poorest of the population have no other choice, in order to earn money for living they are ready to do any work available.

5.8 Conclusion

Indeed, research shows that the city lags behind its economic, social and cultural opportunities. People today spend their last money to buy water. Men work daily from dawn to dusk at a depth of 200 to 270 meters to earn their living, but spend half of their income on water purchases. The research showed that the restructuring or declining of the core industry effected and still effects all spheres of life of Shurab's inhabitants. However, the water scarcity represents the main problem for the population nowadays, thereby being both a consequence and a cause of the vulnerability of the single industry mining town. The lack of water means that the residents' strategy of farming and raising livestock to counteract dependence on the mining industry, ensure food security and generate income through trade in agricultural goods is hardly feasible. The decline of

the core industry and with it the loss of the town's prosperity resulted in a lack of financial means and political leverage to support the citizens in their struggle for drinking and irrigation water.

Due to the significance of water as a source of life, the shortage of water in Shurab affects various fields of the residents' everyday life, determines migration processes trajectories, and causes economic, social, and ecological problems.

Shurab seems to be completely destroyed because of the shortage of water. The water scarcity is harming the function of the ecosystem, leading to conflicts between ethnicities as well as between the population and authorities. In addition, people are forced to leave their native houses. This aspect is harming the economically weak area particularly, because many – especially young – inhabitants left the area already to find a job elsewhere. Also, the shortage of water causes the spread of infectious diseases. All those consequences of water shortages transformed the region persistently.

In addition, people without documents confirming their residence – without passport, marriage, or birth certificate – have migrated into Shurab. This entails that they are excluded from any legal framework, e.g., they cannot address authorities to enforce their rights.

The study provided a comprehensive picture of the situation of the population of Shurab, and it was possible to discern several recommendations for action for the further development of the city. Of primordial importance is an alternative water supply system. This will on one hand solve the lack of drinking water and on the other hand it will give the population the possibility to intensify agriculture as a mean to gain financial income and to improve their economic situation. Secondly, the shorthand solution at the local administrative level, the establishment of water usage timetables had been well accepted by the population and is therefore a good strategy.

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