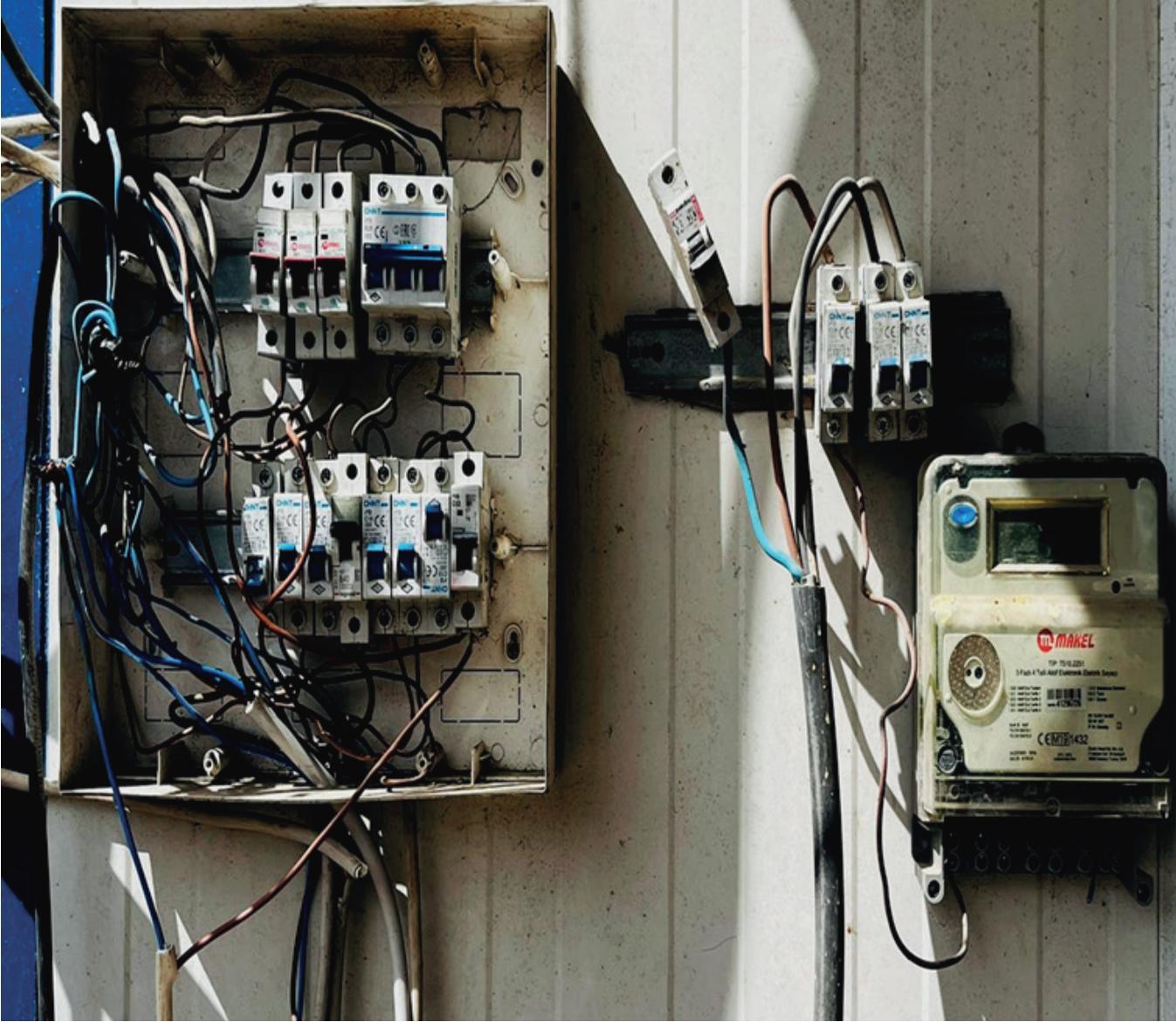


Between Dark and Light

Access to Electricity in Tent Settlement Areas in Adana



BETWEEN DARK AND LIGHT
ACCESS TO ELECTRICITY IN TENT SETTLEMENT AREAS IN ADANA

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Acknowledgment

This preliminary study was accomplished through the voluntary efforts of the authors, encompassing five days of fieldwork. It is our hope that it will inspire more comprehensive research and actionable solutions to address the issues only briefly outlined herein.

Dedication

This brief report is dedicated to the memory of Emira, a 10-year-old Syrian migrant who tragically lost her life from an electric shock in September, 2022. Having fled Syria's civil war at a young age, Emire had spent the last three years of her life in the Tabaklar tent settlement. Like many other children in tent settlement areas, Emira's siblings continue to play barefoot on the electric cables.

Overview

Located on the north-eastern Mediterranean coast of Türkiye, the Çukurova region is known for its continuous agricultural activity throughout the year, though the extent and scale of the work varies. This constant demand for agriculture attracts ‘seasonal migratory agricultural workers’ to the area, who come to live in temporary tent settlement areas for several months in order to make a living.¹

Map 1: Map of Tent Settlement Areas in the Study



¹ This study examines access to and use of electricity in two tent settlement areas in Karagöçer and Tabaklar (see map 1), inhabited by these seasonal agricultural workers and their families, many of whom are Syrian migrants.

As of December 2023, the Adana Provincial Directorate of Agriculture and Forestry reports that there are 65 tent settlements. These are temporary areas allocated for seasonal agricultural workers and their families, who bring along tents, personal belongings, and cookware during their stay. They set up tents, install bathrooms and toilets, regulate water use and establish access to electricity.

Figure 1: A Tent Where Seasonal Agricultural Workers Dwell in Tabaklar



Source: Umut Kuruüzüm

Living in tents near irrigation canals and highways, these seasonal workers face a life without social security and with limited access to basic services such as safe and reliable electricity, drinking water, and adequate sanitation and hygiene facilities, as highlighted by several reports (Development Workshop 2023, 56; UNICEF 2023, 8; Hayata Destek 2014, 39). Their living conditions are markedly poor, marked by insufficient infrastructure, heightened susceptibility to disasters such as floods, and an elevated risk of contagious diseases. However, targeted research that delves into the accessibility and usage of electricity within these tent settlements remains undone, creating a knowledge void regarding the persistent risks encountered by inhabitants, particularly children, every day.

Our objective here is to bridge this knowledge gap by highlighting the inherent risks and current conditions associated with the informal electricity infrastructure in the temporary tent settlements of Adana. By doing this, we aim to stimulate an evidence-driven dialogue and collaborative action to explore and implement practical solutions.

Methodology

Conducted over a five-day fieldwork period from December 10th to December 15th, 2023, in the Karagöçer and Tabaklar tent settlements in Adana, this study engaged 130 individuals across 40 households. The participant age distribution indicates that 25% are younger than 15 years, 45% fall within the 15 to 30 years age range, 20% are aged between 30 and 45 years, and 10% are over the age of 45. The average age in our sample is 26 years, standing 7 years younger than the average age across Türkiye in 2024, according to TÜİK (Turkish Statistical Institute).

Below, two pie charts illustrate the age and gender distribution within our sample of 130 individuals, highlighting that 53 percent are men and 90 percent are Syrian migrants.

Figure 2: Distribution by Gender

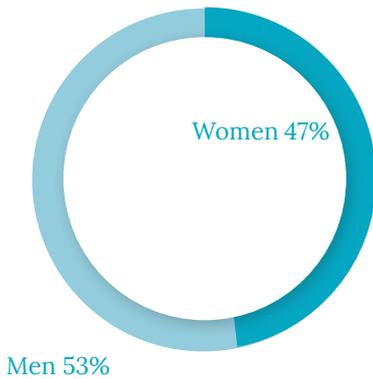
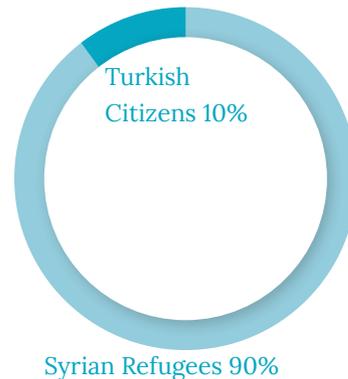


Figure 3: Distribution by Citizenship



Findings

In our study, each household confirmed the presence of electricity in their tents. Notably, 90% of them accessed their electricity through agricultural intermediaries, locally referred to as 'elçi', while the remaining 10% obtained electricity directly from their employers or the landowners, known regionally as 'ağa'. In tent settlements, access to electricity typically occurs through unauthorised means, either by direct illegal connections to the formal electricity network or through the 'second-hand' sale of illicitly distributed and sold electricity to others.

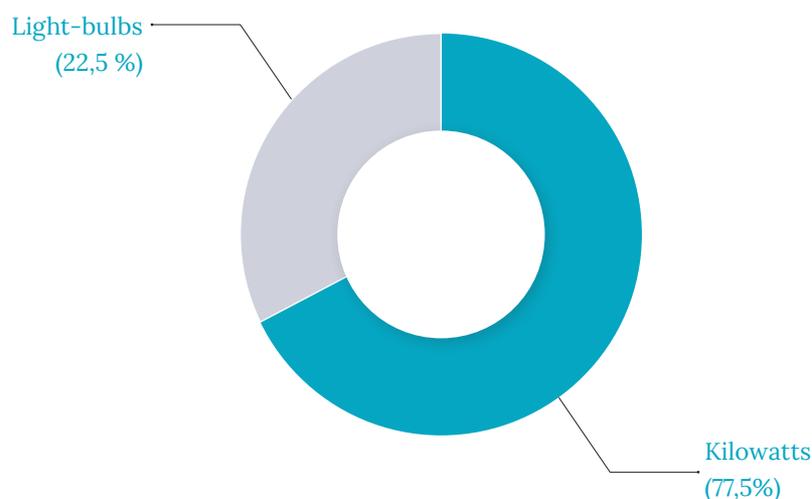
In this context, the 'electricity intermediary' is a person who officially purchases electricity and then illegally distributes and sells it to seasonal agricultural workers, using either a single metre (light bulb calculation) or multiple metres (individual KW calculation). In the absence of individual metres within tents, electricity charges are calculated

using a “light bulb” estimation method through a single shared metre installed by the intermediary. For instance, a household with 2 light bulbs, 1 fan, 1 washing machine, 1 TV, and 1 refrigerator is equated to 6 bulbs, whereas another with 2 light bulbs, 1 washing machine, 1 fan, and 1 refrigerator counts as 5 light bulbs. The billing for electricity supplied to these households is proportionally divided according to the number of light bulbs, with payments collected directly or debts accrued until the next calculation period. To exemplify, if the total price of the bill is 700 Turkish Lira (≈ 24 USD) and there are two tents, one with three light bulbs and the other with four light bulbs; the former pays 300 TL (≈ 10 USD) while the latter pays 400 TL (≈ 14 USD).²

Observations indicate that as the duration of residency extends and the subscriber count rises, there is a systematic transition from utilising the lightbulb method to the implementation of individual meters for each household. In this case, metres are installed both in the residence of the electricity intermediary and in long-term settled tents. Here, seasonal agricultural worker families calculate their kilowatt usage and pay a specified fee to the electricity intermediary.

Within our sample of 40 households, 31 households indicated that they measure their electricity consumption in kilowatts, while 9 households use light bulbs for this measurement.

Figure 4: Methods of Measuring Electricity Consumption



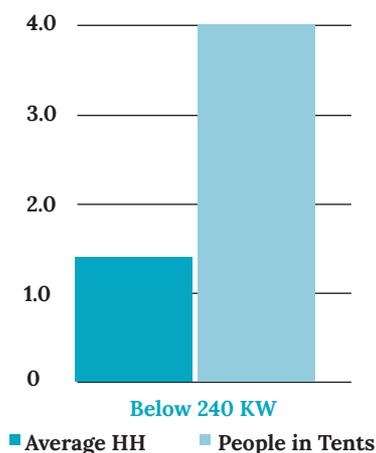
Our empirical investigation demonstrates that there is a discernible variance in electricity charges among households, which seems to be applied in an arbitrary manner to individuals exhibiting similar consumption patterns. For example, a household in

² 1 US dollar (USD) was worth about 29 Turkish liras (TL) in December 2023.

Karagöçer with six bulbs incurs a monthly electricity cost of 800-1200 TL (\approx 27-41 USD), whereas a neighbouring household with five bulbs faces costs ranging from 1000-1400 TL (\approx 34-48 USD). The variance in electricity charges can be partly attributed to the fact that the costs for installing meters and electrical panels may be reflected in the electricity bills by intermediaries for seasonal agricultural workers. Additionally, there is a growing inflationary pressure associated with accessing and utilizing electricity. To compare, a field visit in October 2022 showed that a family in Karagöçer, buying electricity directly from the landowner, pays an average of 300-400 TL (\approx 17-23 USD) monthly for five light bulbs, including two for lighting, a refrigerator, and a fan.³

Overall, our study reveals that the average monthly electricity bill for residents of Karagöçer and Tabaklar using individual meters (77 % of our sample) amounts to 750 TL (\approx 26 USD), with consumption per household remaining under 240 KW. Households face an average tariff of 4 TL per KW of electricity consumed. Comparatively, in Türkiye, the standard electricity tariff is 1.4 TL for consumption below 240 KW and 2.7 TL for usage exceeding 240 KW in 2023 (Official Gazette, 2023). That is, tent dwellers pay nearly ‘3 times’ the standard rate and face a heightened risk of fatal incidents due to inadequate infrastructure.

Figure 5: Comparison of Electricity Prices



Our observations reveal that the agricultural intermediary, when also serving as an electricity provider, extends its influence beyond work arrangements and financial transactions to significantly impact the living conditions of worker families reliant on electricity for their daily needs. Through the power to arbitrarily switch the electricity supply on or off and set prices, the intermediary holds the potential to either penalise or incentivize the seasonal agricultural workers, including Syrian migrants, a practice evidenced in field observations.

³ 1 US dollar (USD) was worth about 18 Turkish liras (TL) in October 2022

Under the stipulations of Law No. 5403 on Soil Conservation and Land Use (Article 13, 2005), the construction of permanent buildings on designated agricultural lands is prohibited⁴. This legal framework presents significant obstacles in acquiring official electricity subscriptions for settlements like Tabaklar and Karagöçer. Without a building permit, these agricultural lands cannot be assigned an address number, complicating the process of formalizing such utilities. Consequently, agricultural lands where permanent structures are legally barred cannot receive an address number, precluding the possibility of obtaining an electricity subscription for such areas. Under this legal framework, these tent settlements, originally intended to be temporary, have become permanent settlements, with their status in limbo and their access to official, safe and reliable electricity still undefined.

In accordance with Law No. 5403 on Soil Conservation and Land Use (2005 Art. 13), exceptions can actually be made under certain circumstances. If no alternative location exists and with the approval of the Soil Conservation Board, permissions may be granted by the Ministry of Agriculture and Forestry for the non-agricultural use of these lands. This is provided that soil conservation projects are implemented and adhered to, allowing for:

- Strategic needs related to defence;
- Temporary settlement needs arising after natural disasters;
- Oil and natural gas exploration and operation activities;
- Mining activities decided to be of public interest by the relevant ministry;
- Plans and investments, including road infrastructure projects, deemed to be of public interest by the relevant ministry;
- Investments related to the utilisation of renewable energy resource areas;
- Investments related to geothermal technological greenhouses.

The temporary legal status of tent settlements, combined with the integration of electricity into the daily lives of residents who dwell in these settlements for months or even permanently, introduces significant safety risks. This situation highlights the 'precarious social life of electricity', underscoring the instability and risks associated with their reliance on unsafe electrical power as most of the cables are exposed outside, they are vulnerable to deterioration from both weather conditions and human activities, heightening the risk of electrical leaks occurring within these cables. In infrastructure-lacking areas, cables laid through the terrain, navigating under or over ground prone to water pooling, weave around tents in a grid-like pattern, significantly heightening the electric shock risk.

⁴ The Law No. 5403 on Soil Conservation and Land Use specifies that lands designated as absolute agricultural, special crop, planted agricultural, and irrigated agricultural cannot be repurposed for non-agricultural activities (2005, Art. 13).

Within the surveyed population of 130 individuals, 23 respondents reported incidents of electric shock over the past four years in the Tabaklar and Karagöçer tent settlement areas. Unfortunately, within the 40 households surveyed, three reported the loss of a family member to electric shock-related incidents. Furthermore, four households experienced fires caused by electrical faults, resulting in the total loss of their shelters.

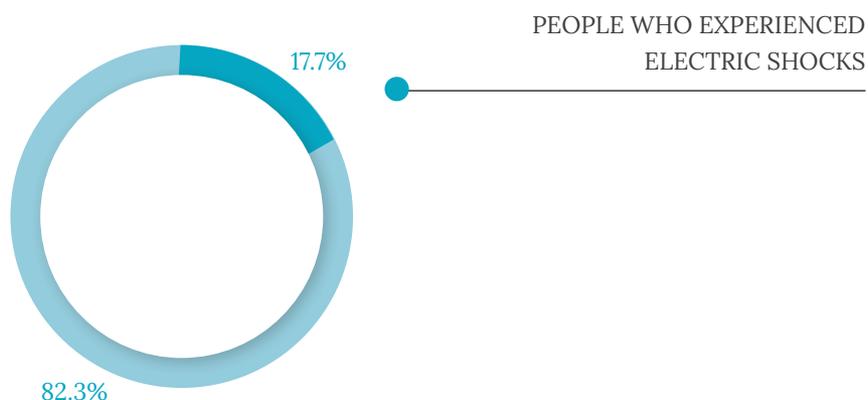
Figure 6: Tent Settlement Area, Tabaklar, Adana



Source: Umut Kuruüzüm

In our research, we found that 90 percent of respondents indicated a lack of knowledge regarding self-protection and precautionary measures against electric shock and damage. 95 per cent of respondents said they were unsure of what to do in the event of an electric shock, while they indicated that they would be willing to undergo training to inform them of these matters.

Figure 7: Number of Individuals Who Experienced Electric Shocks



The tent settlements house a notably large population of children, a trend closely linked to the elevated fertility rates among seasonal agricultural workers. These children move about barefoot, traversing spaces cluttered with haphazardly placed cables, facing an increased risk of electrocution. The risk and health consequences of an electric shock escalate with adults who do not know how to implement preventive measures or lack the knowledge to respond effectively in the event of an electrical emergency.

The widespread lack of knowledge on safety measures and emergency responses to electric shocks highlights a critical need for educational interventions. The strong interest in safety training among the majority of the community presents an opportunity for targeted programs that could significantly mitigate risks and enhance the resilience of these populations against electric shock-related dangers, underscored by tragic losses and material damages.



Recommendations

Despite the challenges in the access and use of electricity faced by seasonal agricultural workers residing in tents, viable solutions are attainable. Our investigation points to 4 urgent actions and 8 tasks, underscoring the imperative for collaboration among governmental bodies, non-governmental organisations (NGOs), and corporate entities authorised and licensed for electricity distribution to facilitate transformative progress.

1

Facilitating dialogue and collaboration

Task 1.1

Convene a consortium of stakeholders from governmental agencies, non-profit organisations, and corporate bodies to establish a working group.

Task 1.2

Schedule biannual meetings aimed at progressing towards the resolution of the issue.

Implementing a training program for tent settlement residents

Task 2.1

Facilitate electricity usage and safety training programs for children at a nearby school.

Task 2.2

Conduct training sessions on electricity usage and safety practices for the residents of tent settlements.

2

3

Transition from indirect electricity sources to secure electricity access

Task 3.1

Secure governmental approvals for restructuring the electricity supply in pilot temporary tent settlements.

Task 3.2

Finalize a feasibility study for the transition by the electricity distributor, minimising electricity failures to affected individuals.

Fair distribution of electricity to tents by authorised source with monitoring

Task 4.1

Securing new electrical cables, undertaking underground installations, and carrying out the relocation and refurbishment of electrical panels located near the tents.

Task 4.2

Introducing energy-efficient lighting and efficient energy use solutions to enhance savings for residents.

4

