

Elizabeth Haab

Energy profiles for Kyrgyz mountain villages as a basis for a targeted energy strategy

A survey method and pilot run in Jergetal

Bachelor Thesis

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**Energy profiles for Kyrgyz mountain villages as a basis for a
targeted energy strategy –
development of a survey method and pilot run in Jergetal**

Bachelor thesis

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Abstract

Clean, reliable energy is an important factor for any village or areas development. Despite this, 1.2 billion people had no access to electricity and 2.8 billion people relied on traditional biomass for cooking and heating in 2016 according to the International Energy Agency.

One of the United Nations Sustainable Development Goals states that by 2030 everyone should have access to clean, sustainable energy.

In light of this, the aim of this project was to design a methodological approach to appraise the energy situation in a Kyrgyz mountain village in order to make it possible for that village to work towards the energy targets of the Sustainable Development Goals in a clear, focused way. To do this, two surveys – a questionnaire and an observational survey - were developed that included all energy related topics such as reliability, affordability, availability, quality and cleanness of energy as well as energy efficiency, and percentage of renewable energies.

The advantage of these surveys as a profiling method is that it is able to be used across a wide range of landscapes, energy situations and demographics. With it a clear picture can be painted as to what the energy situation is and what steps would have to be taken to ameliorate the situation.

The surveys were tested in a pilot run in a village called Jergetal, where the researchers spent ten days interviewing 16 households and taking notes and pictures on the state of the buildings and any energy efficiency measures or renewable energy technology.

The survey results showed that while all the households had access to electricity, the heating and cooking was mainly done with fire fueled by coal and dung bricks. The houses were not insulated and no renewable energies were being used.

The main reasons for this was lack of information and lack of funds.

According to the evaluated surveys, next steps would be to work on energy efficiency, doing courses in insulating houses with local materials and teaching villagers how to build energy efficient stoves.

The survey itself will be handed over to the local partners for further developing and testing.

Zusammenfassung

Eine gesicherte Energieversorgung ist ein wichtiger Entwicklungsfaktor für den ländlichen Raum. Im Jahr 2016 lebten laut der Internationalen Energieagentur trotzdem 1.2 Milliarden Menschen ohne elektrische Energie. Weitere 2.8 Milliarden Personen heizen und kochen ausserdem ausschliesslich mit Biomasse.

Eines der Nachhaltigkeitsziele der UNO verlangt, dass bis zum Jahr 2030 alle Menschen Zugang zu sauberer, nachhaltiger Energie haben sollen.

Um diesem Ziel näher zu kommen, lag der Fokus dieser Arbeit darauf, eine Methode zu entwickeln, mit der kirgisische Dörfer auf ihren Energiebedarf hin geprüft werden können. Dies sollte dazu dienen, allfällige konzeptionelle und zielgerichtete Verbesserungsmassnahmen zu ergreifen.

Die entwickelte Methode, in Form einer Erhebung, besteht aus zwei Fragebogen, welche diverse Energiethemen wie z.B. Zuverlässigkeit der Energieversorgung, ökonomische Aspekte, Sauberkeit und Qualität der Energie sowie Energieeffizienz und Anteil der Erneuerbaren Energien umfassen.

In einem Dorf namens Jergetal wurde die Erhebungsmethode getestet. Hier wurden 16 Haushalte zu ihrer Energiesituation befragt. Dazu wurden Fotos und Notizen zum allgemeinen Zustand der Gebäude und allfällige Energieeffizienzmassnahmen aufgezeichnet.

Die Ergebnisse zeigten, dass obwohl alle Haushalte ans elektrische Netz angeschlossen sind, die Stromversorgung nicht zuverlässig ist. Geheizt und gekocht wird mit Kohle oder Mistziegeln. Keines der untersuchten Häuser ist isoliert oder weist Massnahmen für eine verbesserte Energieeffizienz auf. Im ganzen Dorf werden keine erneuerbaren Energien eingesetzt, obwohl die Leute davon gehört haben und grundsätzlich auch daran interessiert sind.

Laut den Angaben der Umfrageteilnehmer wird dies hauptsächlich einem Mangel an Informationen und zu hohen Kosten zugeschrieben.

Die Auswertung der Erhebung in Jergetal zeigt, dass für eine verbesserte Energiesituation und eine gesicherte Energieversorgung in einem ersten Schritt an der Energieeffizienz der Gebäude gearbeitet werden muss. Dies könnte zum Beispiel durch Kurse unterstützt werden, in welchen die Interessenten lernen, wie sie mit lokalen Materialien ihre Häuser dämmen und energieeffiziente Öfen bauen können.

Die Erhebungsmethode, welche nach dem Pilotversuch im Jergetal weiterentwickelt wurde, wird an die lokalen Partner weitergegeben um fertig entwickelt und angewendet zu werden.