

## A Study of Models of Life Quality Development of Isan Marginal Communities as Affected by Installation of the Solar Home System

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**Abstract: Problem Statement:** The electricity production system by using solar home cells is regarded as a substitute for energy which the state provides for the marginal communities because the area cannot be extended for putting up pylons with electric cables, all this for the marginal communities to have better life and being. The purposes of this thesis were to examine the history and development of the electricity production system by using solar home cells, and to examine models of life quality of Isan marginal communities as affected by the use of solar home system by using solar home cells. **Approach:** The sample consisted of 100 people in Isan marginal communities who lived in mountains, on highlands, on lowlands, and in national park areas with totally 4 areas. The instruments used for collecting data were an observation form, an interview form a group discourse note-taking form and workshop note-taking form. The 6 aspects of Minimum Needs (MN) was included into every instrument. The data analysis results were subsequently presented by means of a descriptive analysis: **Results:** 1) for the history and development of the solar home system, it was found that Thailand began using solar cells in 1977 by the Unit of Volunteer Doctors. At present, solar cells are used in various types: battery charging stations, communication systems, water pumping system, traffic light signals, blinkers and electric systems in marginal communities in general. 2) for the models of life quality development of Isan marginal communities as affected by the use of the solar home system, the life quality was developed according to indicators of maximum needs in these 6 aspects: the model of developing good health, the model of developing progressive incomes, the models of This value cultivation and the model of developing cooperative development. It was found that the positive effects were at 98.67% and negative effects were at only 1.33%. **Conclusion/Recommendation:** There for, it can be seen that the solar home system can generate more positive outcomes than negative ones in life quality development of Isan marginal communities. This is in accordance with all the 6 aspects of Maximum Needs (MN).

**Key words:** Life quality development, isan marginal communities, solar home system

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### INTRODUCTION

Basic factors which humans in both urban and rural societies have the same needs are 4 necessities for life, namely food, clothing, shelter and medicine. However, each person in each society may not receive these things equally, depending upon real situations of each area and real status of each person. Besides the 4 necessities mentioned, there are more things which humans need to make better life and more convenient travelling, needs for water supplies for consumption, needs for telephone for communication, and needs for electricity for facilitation in the daily life. These things are necessary for developing and upgrading well-being of people, and are utilities which the government must provide to respond to sufficient needs of people, particularly electric power. Electricity is regarded as a

minimum need in the beginning rank which can help develop life an being of people because electricity is greatly useful power. Almost all human activities are related to electric power from getting up in the morning tell going to bed at night. Also, electric power can be changed into many other kinds of powers such as heat power, coolness power, mechanical power, light power, sound power. These kinds of powers can generate instruments, utensils, and laborsaving tools for facilitating the living in the daily life of people<sup>[1]</sup>.

During the past several years, extension of electricity areas for people in remote rural areas may cost higher capitals than the advantaged returned. There was an argument that having electricity in the remote villages would stimulate poor rural people to buy luxurious appliances to use in their households. Electricity can create and develop new careers

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including different production activities at villages. When there are careers to do in their villages, When they have jobs to do at their villages, it will be unnecessary for these rural people to move to work in towns. When they work at their villages and live close to their families, the life quality will also become better<sup>[1]</sup>. As for marginal communities or remote rural communities, there are no roads to access them, or there are inconvenient paths or they are in the forbidden areas. In these areas electric pillars cannot be put up for electric wire. So the government has had a policy for bringing in the solar home system instead of the electric system for these people to have electricity. This system can be used with 2 10-watt fluorescent lamps and a 14-inch television set for 4 hours per day. This can help the villagers have better life quality at a certain level.

This study selected Isan marginal community areas as representatives of communities for providing data to respond appropriately to research questions and to completely achieve the research purposes. The areas selected were Isan marginal communities where the solar home system was installed.

Thus the researcher as one of the personnel in the state agency realizes the importance of these problems of Isan marginal communities where there is no regular electricity. No electricity can cause many different problems such as social, economic, educational, sanitary, cultural and environmental problems. Accordingly, they have no light to perform activities at night; they cannot receive information; they lack necessary things for consumption; they do not have sufficient incomes, and others. If the problems mentioned are not urgently solved, the life quality of people in Isan marginal communities will develop slowly and cannot overtake the global changes. Therefore, in order to obtain the answers to the research questions in this study of the models of developing life quality of Isan marginal communities as affected by the use of the solar home system, the researcher conducted this study to obtain a guideline and to implement the guideline in agencies or organizations involved in developing life quality of people in other different areas to be efficient in urgency in the future.

**Purposes and objective:** The purposes of this were to examine the history and development of the electricity production system by using solar home cells and to examine models of life quality of Isan marginal communities as affected by the use of solar home system by using solar home cells.

#### **MATERIALS AND METHODS**

**Population and Sample:** The sample consisted of 100 people in Isan marginal communities who lived in

mountains, on highlands, on lowlands and in national park areas with totally 4 areas.

**Instruments:** The instruments used for collecting data were an observation form, an interview form, a group discourse note-taking form and workshop note-taking form. The 6 aspects of Minimum Need (MN) was included into every instrument.

**Data analysis:** The data analysis results were subsequently presented by means of a descriptive analysis.

#### **RESULTS**

The results of the study were as follows:

- For the history and development of the solar home system, it was found that Thailand began using solar cells in 1977 by the Unit of Volunteer Doctors. At present solar cells are used in various types: battery charging stations, communication systems water pumping system, traffic light signals, blinkers and electric systems in marginal communities in general
- For the models of life quality development of Isan marginal communities as affected by the use of the solar home system, the life quality was developed according to indicators of maximum needs in these 6 aspect: the model of developing good health, the model of developing progressive incomes, the model of Thai value cultivation and the model of developing cooperative development. It was found that the positive effects were at 98.67% and negative effects were at only 1.33%

#### **DISCUSSION**

The results of the study were discussed as follow:

- For the history and development of the solar home system, it was found that humans used sunlight to produce electricity power by using solar cells for the first time in 1954 by using with aircrafts and satellites. Later, they used solar cells on the earth. Japan has been continuously developing solar cells and using them the most in the world. In 2005 throughout the world, 1,460 megawatts of solar cells were used. It has been expected that in 2020 the solar cells to be used will increase to 140,000 megawatts. For Thailand, the Unit of Volunteer Doctors is the first group who use solar cells. In 1977 they use solar cells for facilitation in daily duty, especially their duty in remote rural areas. At present, solar cells are used throughout Thailand in various types 0.80% of households in remote rural

areas used solar cells and the state must provide electric power for the community thoroughly

- For the models of life quality development of Isan marginal communities as affected by the use of the solar home system, it was found that the life quality was developed according to indicators of maximum needs in these 6 aspects<sup>[1]</sup>

For the model of development in good health, it was found that the villagers learned and developed their food consumptions to have well-cooked food which were clean, safe and useful to the body. They knew how to use medicines to cure illnesses and they went to see the doctor when they were sick. However, some groups of villager bought tonic drinks to take which wasted money and were useless to the body. This was because they received information from advertising media in television and radio<sup>[2]</sup>.

For the model of development in having house to live in, it was found that the villagers had development of house management to be clean, sanitary and tidy. There were warm families with safety of life and properties<sup>[3]</sup>.

For the model of development in adherence to studying, it was found that the villagers aged 15-60 years learned and developed themselves to be literate and able to arithmetic. Children could read and do homework at night and could perceive more information, causing them to have better learning achievement to be background to further their studies at higher levels in towns. In accordance to<sup>[4]</sup>, he says about the process of accepting new things that having someone or a group accept new things which lead to changes is what is related to personality, knowledge, understanding, attitudes and values of individuals or a group of persons in the society.

For the model of development in progressive incomes, it was found that the villagers had time at night to do their supplementary careers, causing them to increase incomes, to have more savings, At the same time, expenses on facilities and consumer goods unnecessary for the daily life increased<sup>[5]</sup>.

For the model of development in cultivating Thai values, it was found that the villagers made merits according to the Isan Hit Sip Song Khong Sip Si in more frequencies, (Hit Sip Song is the 12 Isan traditions to be observed in each of the 1 lunar months. Khong Sip Si is the 14 Isan customs to be practiced each between 2 status of persons, e.g. father to child, child to father). It was more convenient to make merits

For the model of development in cooperative development, it was found that in Isan marginal Communities after installation of solar home systems

the villagers formed more groups to perform different activities in their communities. Conflicts within each village decreased. The villagers realized the importance of becoming memberships of the groups established. However there still were some inequalities in practice among persons in each group<sup>[3]</sup>.

## CONCLUSION

From examination of the models of developing life quality of Isan marginal communities as affected by installation of the solar home systems, it was found that the positive effects were at 98.67% and negative effects at only 1.33%. This could demonstrate that the solar home systems could affect the development of life quality of Isan marginal communities in accordance with the indicators of maximum needs in all these 6 aspects: the model of developing good health, the model of developing shelters, the model of developing love of education, the model of developing progressive incomes, the model of developing Thai value cultivation, and the model of developing cooperative development.

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