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CLEAN WATER WITH SOLAR ENERGY

Solar water disinfection (SODIS) is a simple, safe and environmental friendly method to generate safe drinking water. Exposing transparent and water filled bottles for a sufficient time to the sun destroys bacteria, viruses and other pathogens and makes the water safe to drink. SODIS does not require any fuel, chemical agents or filter equipment. This makes it an easy, economic and environmental friendly water treatment method applicable to any household members and also schoolchildren.

SODIS promotion in selected provinces of the Mekong River Delta was initiated by HELVETAS Swiss Intercooperation in 2004. It was intensified in 2010 under the «Clean Water with Solar Energy and Awareness Raising for Hygiene Sanitation in the Mekong Delta» project. Besides the promotion of water treatment, hygiene education and sanitation was added to project activities. This documentation presents project effects based on an impact study conducted by EAWAG in May and June 2013 focusing on behavior change factors.

HELVETAS Swiss Intercooperation

eawag aquatic research

HAPPEL STIFTUNG

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THE CONTEXT

In Vietnam about 75 percent of the rural population has access to hygienic water, while the access to 'clean' water, defined by national potable water quality standards, is estimated to be around 35 percent only and rural sanitation is also low at 51 percent.

With the National Target Program for rural water supply and sanitation the government wants to address the water quality for households not connected to water supply systems.

HELVETAS Swiss Intercooperation in Vietnam started the Promotion of the SODIS Method with a pilot project in 2004 in the South of Vietnam and has worked in four provinces.

The project is proposing a cheap water treatment option besides of boiling promoted by the government.

On the national level the project workes with the Ministry of Health and Centre for Rural Water Supply and Environmental Sanitation as key partners for the elaboration of the IEC materials development of the project and institutionalization of the recommended methods and standards.

On provincial and local level the main partner is the Women Union taking care of planning, implementation, and monitoring of different project activities. More than 250 women were trained as community promoters.

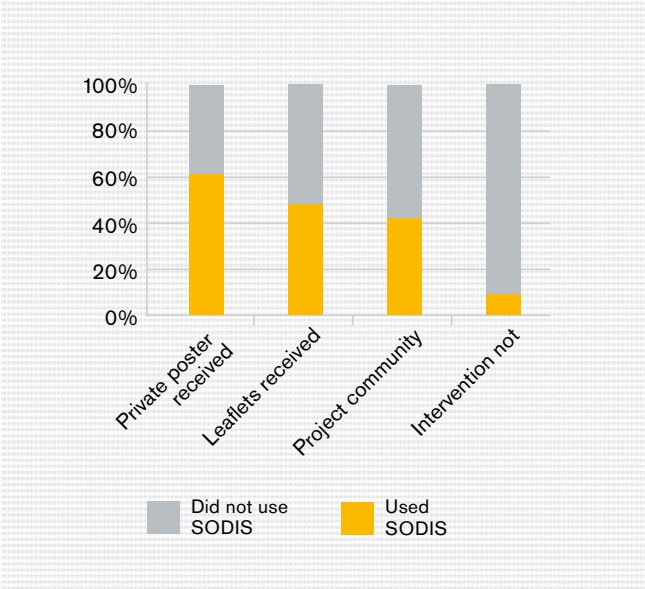
Until now more than 40'000 households and more than 30'000 students have been reached and trained on the SODIS method as well as on good hygiene behaviour.

STUDY METHODOLOGY

For the impact study 649 randomly selected households from project and non-project communes were surveyed through quantitative structured questionnaires and the obtained data was statistically analyzed. Main target behaviors were safe drinking water consumption and SODIS water consumption. For the drinking water consumption, behavioral factors according to the Risk, Attitudes, Norms, Ability and Self-regulation Model (RANAS) were surveyed and the drivers and barriers of safe drinking and SODIS water consumption were determined.

INCREASED SODIS USE FOLLOWING THE CAMPAIGN

Ten SODIS promotion activities including, household visits, community meetings, distribution of education material and mass media campaigns were implemented. More than half of project village population was reached.



Out of the ten implemented interventions, all were effective to prompt recipients to use SODIS. Private posters were most efficient, achieving 61% SODIS use among recipients. Information leaflets and community meetings achieved 50%, respectively 47% SODIS use. TV broadcasts and community meetings were particularly effective to create SODIS users among low income households. However, most of the new SODIS users had consumed safe drinking water from other sources before. In consequence, the increased SODIS use did not substantially increase safe drinking water consumption. In total, 25% of the recipients of interventions used SODIS at the survey time. Past and present SODIS use was more prevalent among low income than high income households.

Low awareness of the health risks of untreated tap water, not trusting SODIS, difficulties to perform SODIS with all drinking water, and difficulties to perform SODIS during the rainy season were identified to be the main reasons why the remaining 75 % of respondents did not use SODIS.

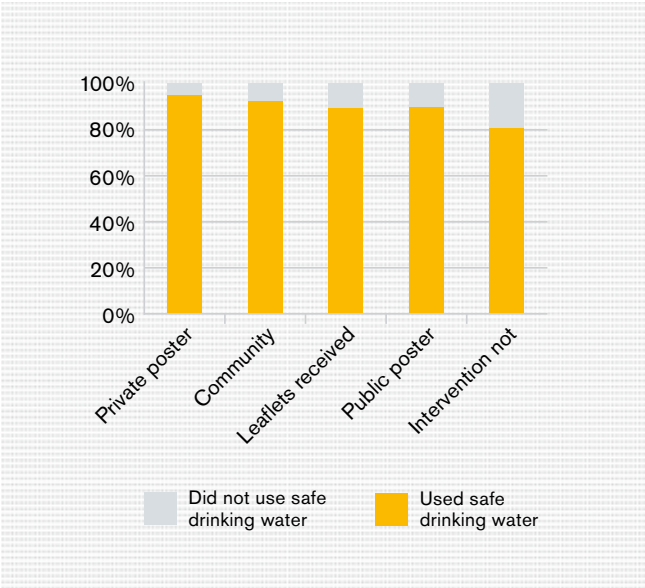
> *« People living in remote villages like us are not only poor but also unlucky. While others have access to tap water, we still have to use river water. It is dirty with high turbidity. We are scared of the health risks. »*
>
> A boat man in Long An

INCREASED SAFE DRINKING WATER CONSUMPTION FOLLOWING THE CAMPAIGN

New safe drinking water users were generated mainly by private SODIS posters, the community meetings, leaflets and public posters. These interventions achieved more than 90% safe drinking water use among their recipients. Amounting to 80%, the safe drinking water consumption was, however, also high among households who had not received any intervention.

The main drivers of safe drinking water consumption were the belief that drinking safe water made respondents healthier and that drinking unsafe water constituted a health risk for adults and children. Further, safe drinking water users particularly liked to drink their water, and consuming safe water was considered socially desirable.

The community meetings also promoted hand washing with soap at critical moments and the use of latrines. However, no considerable effect on hand washing and latrine use was identified, but the effect was slightly higher in the low income and low education group.



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KEY RESULTS OF THE SODIS PROJECT

- 25% increased SODIS use among campaign participants.
- 40–60% increased SODIS use among recipients of private posters, leaflets and community meetings.
- Safe drinking water consumption was increased to more than 90% among the participants of the campaign.
- More than 40'000 households and 30'000 school children trained on SODIS use.
- Promotion in school and household visits did not have anticipated effect on behaviour change at home.
- SODIS was preferably used by low income households, approving it as a viable method of water disinfection where financial means are short

Following four recommendations could improve the project implementation:

1. ADAPTING THE MESSAGES

- To increase safe water consumption, further SODIS promotion can be an efficient approach. Four key messages should be communicated: 1) Untreated tap water is dangerous, particularly for children aged under five years. 2) SODIS is safe and trustfull if performed correctly. 3) ‹Important persons› want you to do SODIS. 4) SODIS is cheap and easily done.
- These messages should be conveyed through private posters, leaflets and community meetings, since these interventions have already been very effective. Future interventions should primarily target unsafe water users.

2. INVOLVING THE GOVERNMENT

- Until the time of writing, the government focused on boiled drinking water promotion. The high prevalence of boiled water use and the positive attitude of the study's participants towards boiled water suggest that these activities were successful. To facilitate SODIS promotion by the government, activities could further aim at including it in the national drinking water guideline.

3. PROMOTING IMPROVED SANITATION

- While safe drinking water consumption was high in the study communities, the sanitation situation was critical: Only 56% of the respondents used latrines. If further WASH interventions are intended to be implemented, they should focus on improved sanitation.

4. PERFORMING BASELINE SURVEYS

- To evaluate the effectiveness of future WASH campaigns, a baseline survey including behavior factors should be performed. This would not only function as the baseline for an impact assessment, but would also identify the crucial key messages and elements to effectively achieve behavior change.

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