

Seminar on Construction of Solar Collectors in Stepanavan, Armenia, June 2-4, 2009

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Within the framework of planned activities in June 2-4, 2009 Seminar on Construction of Solar Collectors was organized in Stepanavan Armenia by NGO Eco_Lore in cooperation with RCDA Georgia and support of WECF. The seminar was organized based on the programme agreed with WECF Germany, and WECF Caucasus coordinator. (Program attached)

The number of participants 22 that was represented by different organizations and communities from Stepanavan, NGO AWHHE and Pro_Licence students from University of Savoy, France.

The first day of the seminar was devoted to introduction of the seminar program and presentations of the participants. The participants presented their vision of the seminar.

The presentations were made on the opportunities of Use of Solar energy in rural areas and possibilities of construction of different solar devices based on the locally existing materials and technical skills that were followed by discussions and questions that were interesting for participants.

The afternoon seminar was devoted to presenting guidelines for construction of solar water collectors and discussing the details of the constructions based on use of different materials. Particular attention was focused on construction of solar collector with metal absorber with wood frame. The focus on construction of solar collector with metal absorber was made as after the discussions it was evident that metal solar collectors are easy to construct, the materials are available locally, and the technical knowledge for welding and wood works exists in every rural area.

The evening session was devoted to theory how to construct a solar fruit and vegetable drier.

The second day of the seminar was devoted to practical action constructing of solar water collector with metal absorber and solar fruit and vegetable drier.



construction and painting of the metal flat-plate collector

All the jobs starting from assembling wood frame and welding the absorber were made by the participants themselves. Simultaneously the solar fruit and vegetable drier was constructed by the participants themselves

following the instructions and knowledge received at theoretical sessions. By the evening construction of the solar collector and fruit and vegetable drier were almost accomplished.

During the evening program the participants were explained how to construct the heat exchanger and install in the tank.

The third day of the seminar the participants adjusted the solar collector to the water system, equipped the heat exchanger and installed the tank. The solar fruit and vegetable drier was also finished and cherries for testing were put in.



solar fruit drier

As the weather was hot in an hour the temperature in solar collector reached 60c. The participants have become confident in the efficiency of the solar collector and solar drier.

The next session in the morning was devoted to evaluation of the seminar. The participants acknowledged that the seminar was useful, much needed and also interesting. The evaluation was followed by lively discussions on the opportunities and advantages of use of solar devices in rural communities.

All the participants unanimously agreed that this kind of solar collectors are easy to construct, cheap and affordable and in addition do not require special complicated equipment. The Solar Water Collector with metal absorber in a wooden frame can function without any problems within the period of 15-20 years depending upon the maintenance and treatment of wood.

At the end of the seminar the certificates with CD with the seminar materials: presentations, pictures, guidelines were given to each participant.

It should be mentioned that all the participants expressed their gratitude to WECF for supporting in organizing this kind of seminar.

Comments

1. The seminar was well organized despite some problems in due supply with necessary materials
2. The method of organizing the seminar learning by-doing is justified
3. The participants were active. Particularly representatives of AWHHE from Haianist and community representative from Sverdlov, Stepanavan should be mentioned
4. Metal Solar Collectors are affordable for poor households, village schools, kindergartens.
5. World Vision Armenia representatives expressed their will to organize this kind of seminar in the communities they work and asked for support

Recommendations

1. Selection of the participants for this kind of seminars should be based on the technical skills of the participant and more represented by communities rather than NGO staff.
2. Follow- up actions for this kind of seminar should be seminars in respective communities
3. In future activities support of business groups in communities that are specialized on construction of solar collectors and other kind of solar devices like driers and etc. or establishing Solar Resource Centers in WECF partner countries deems appropriate.
4. Based on the seminar participant evaluations and suggestions organizing seminar (TOT) on construction of different kind of solar fruit and vegetable driers and other solar devices is necessary and useful. As introduction of solar technologies is a way out from poverty.
5. Solar fruit and vegetable driers provide good opportunities for gaining quick incomes and employment. They represent viable business opportunity for women, community groups, school cooperatives. Through value-adding by drying fruits, vegetables, medical plants, spices, wild berries or other food products in addition to ensuring local food supplies it ensures much higher incomes for households *E.g. If a household manages to dry 100 kg. of let's say chilly pepper per season it can gain incomes equal to AD 1.2 -1.3 million selling the same amount at once without drying it can gain only some AD 280-300 thousand*
6. The Manuals, guidelines and other publications should be distributed to seminar participants if not in native languages at least in Russian
7. Developing system of micro financing for rural communities for purchasing materials for solar collectors, fruit and vegetable solar driers, other solar devices can greatly contribute to meeting development needs of local communities



Training participants and trainers with the solar collector