



ISS - A SUCCESSFUL TRIAL FOR INTERNATIONALIZATION OF SPECIALIZED EDUCATION AND TRAINING

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International Summer School on Direct Application of Geothermal Energy (ISS)



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BACKGROUND

There is no doubt that development of any energy technology, production or application of different types of energy sources cannot be performed without having on disposal good educated staff of all necessary levels, i.e. scientists, experts, engineers, technicians, workers, etc. However, according to the collected experience during the past 25 years, organization of specialized education and training on alternative energy sources and their application is very complicate because the “market” at national level is normally to small to justify the investments and running costs.



SITUATION

When geothermal energy is in question, its internationalization has also not been successful. International School of Geothermics in Pisa (Italy) doesn't work already 10 years, the Geothermal Course at the University of Auckland (New Zealand) was canceled several years ago. The most successful one, i.e. UNU University in Reykjavik is still working but only for 20 students per year. First actions to improve the situation through the institutional education systems of European countries are presently in flow under the coordination of UNESCO.



FOUNDATION OF ISS

In 1989, after a period of rich collaboration in development of projects in Greece, Italy and Macedonia, a group of scientists decided to support the idea of Prof. Popovski to start with organization of a special type of international geothermal training. Except to follow the trials to run continual courses at the same location, to go to the countries where geothermal development is in flow and to offer them organization of special courses, accommodated to the local organizational and professional needs.



REGISTRATION



Prof. John
Lund speak-
ing at the
Seminar in
Poland, 2004

Taking into account that institutional education systems in no one of the countries in question showed any inter-est for such an activity, it was decided to register the school as an independent international non-profit collaboration activity and, later on, to try to get some “umbrella” of any of the international organizations dealing with alternative energies development. That was success-fully fulfilled in November 15, 1989 when ~~ISS has been registered in Skopje, Republic of Macedonia~~ International Summer School on Direct Application of Geothermal Energy

COSTS OF LECTURERS AND PARTICIPANTS FROM DEVELOPING COUNTRIES



Team of lecturers for
the WGC short courses
programme



In order to decrease the costs of organization, renowned international specialists have been requested to teach at ISS courses free of charge.

Plus, a system for supporting regular participation of students from developing countries have been established from the beginning of the activities.



PARTICIPANTS



Participants of the
Course in Bad Urach
In Germany, 2001

Up to now, more than 1000
dents from more than 40
es from all over the world
cipated the courses and work-
shops of ISS. They are mainly
geologists, hydrogeologists,
chanical and electro engineers,
agronomists and economists
tending to learn more about

in-
par-ticularities of geothermal energy application in order to
resolve so-me problem of own practice or gaps in “know-
how”. Normally, ab-out 60-70% of participants are from the
country where concrete event is organized and 30-40%

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Germany
ones.

holders from developing countries and neighboring
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METHODOLOGY (1)



A geothermal landscape
in Iceland

With normal variations during development of the school, ing methodology is normally ed:

Organization of one course on particular part of the geothermal energy development and gy(ies) of application (two days lectures, plus one day technical

excursion), plus one workshop connected to the specific local problem(s) of development and application of geothermal energy (two days presentations and discussions);



METHODOLOGY (2)



Beautiful “Blue lagoon”
(before reconstruction)

In order to enable to participants to follow easily the lectures, text books for courses and proceedings of presentations of invited and local speakers are regularly published in advance;

Lectures normally last 45 min. and presentations 20 min. plus discussion;

Local geothermal projects and facilities are used for the practical part of the training.



METHODOLOGY (3)



Good side of the methodology is that enabling concentrated training thanks to the high quality of lecturers and that courses and workshops do not last more than one week together with the travel time. That enables participation also for business people.



METHODOLOGY (4)



Geothermally heated greenhouses
in Ribeira Grande at Azores

Valuable contribution of Dr. Mary H. Dickson and Dr. Mario Fanelli from CHR in Pisa (Italy) for development of the methodology during the initial years should be underlined.

Weak side of the methodology is that the quality of practical training strongly depends on the local conditions, i.e. geo-thermal projects and special facilities on disposal. That was the reason why normally countries with already developed initial geothermal projects have been mostly chosen to host the courses.



LITERATURE



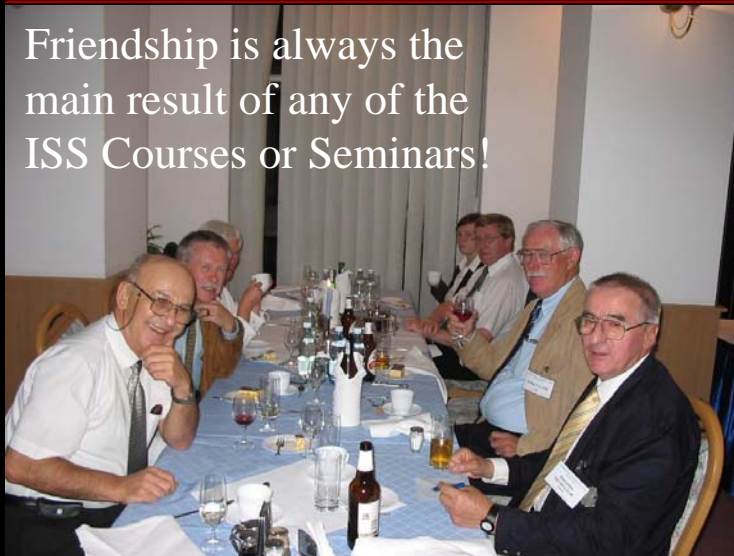
As already mentioned above, regular practice of ISS is to produce the text books and proceedings in advance. Du-ring the 17 years of work, ISS produced 25 volumes of geothermal literature which means that about 3000 geothermal books and 400 CDs are spread between geothermists all over the world. When direct application of geothermal energy is in question, the ISS publications are presently the main source of the data and information, together with the proceed-ings of World congresses of IGA.

Wood geothermal drying in Zakopane (Poland)



RESULTS

Friendship is always the main result of any of the ISS Courses or Seminars!



Up to now, 35 courses, workshops and seminars have been organized in Bulgaria, Greece

Germany, Macedonia, Poland, Portugal, Slovenia, Romania, Turkey, U.S.A., , etc.

25 volumes of text-books, proceedings, handbooks, etc. have been published.

Support to organization list of national courses and workshop organization has been given and a list of national development programs supported.

GENERAL ESTIMATION OF REACHED RESULTS



Some general statements after 17 years of activity can be taken, such as are:

ISS fulfilled the tasks taken in 1989, i.e. it became a worldwide recognized training center. There is no any other center with such experience and quality in the world, when organization of short courses and workshops is in question;

ISS courses and workshops are of fully international character. Their location is each year in different country and the lecturers and participants from more than 40 countries all over the world;



Activity of ISS stimulated establishment of new training centres, such as are the ones at the University of Oradea (Romania) and at the Dokuz Eylul University of Izmir (Turkey). They already organized several very successful international courses in collaboration with the ISS. Their establishment as regional centres for geothermal training can be expected during the coming years.

However:



ISS still didn't resolved the problem of continual financing, even needing minimal funding in comparison with any other activity of this character;

ISS still didn't resolved the problem of recognition of own certificates. Due to the character of registration it cannot be incorporated in national institutional education systems, and due to the absence of regulation it is not "officialized" in the frame of IGA. On the other hand UNESCO didn't incorporated it in the own educational activities;

Due to the lack of funds, ISS is still mainly present in the European countries.



CONCLUSION

In any case, the 17 years successful story reached its zenith. Now, it's time to improve it with new organizational forms and content of work. We hope very much, on behalf of all the “army” of enthusiasts participating the development and work of ISS, that a justification to follow the activity shall be found and confirmed.



Techniques pour une Terre durable

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THANK YOU FOR THE ATTENTION!



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