

I N T R O D U C T I O N

In 1981, two meetings of the IUFRO-Subject Group S1.04-00 for torrents, snow and avalanches took place at quite different places: namely, in June the IUFRO-Colloquium with a joint FAO-IUFRO meeting in Grenoble, France, and in September the sessions of the Congress Group 1.4 during the XVII IUFRO World-Congress in Kyoto, Japan. Some contributions of the Colloquium in Grenoble and the so-called "invited papers" of the Congress Group 1.4 in Kyoto have already been published. A list of these works is annexed to the Introduction. The present booklet contains the following contributions of both meetings which have not been published up to now.

At the presentation of the contributions, new ways have been taken. Besides the usual written, completely formulated manuscripts, there were also illustrated representations, so-called posters, which have been explained verbally by the respective author. The complete manuscripts, which have been presented for publication, have been reproduced in the first part of this volume, as far as possible unchanged. The second part contains abridgements of lectures, and before all the summary of the many poster presentations of the Congress Group in Kyoto. It was not possible to reproduce the verbal contributions, as well as the discussions which were often very extensive. The different works of both meetings have been classified according to technical point of views within the cited main parts of this volume.

The main theme of both meetings was the research in small watersheds to enable a quantitative coverage of torrent erosion in all its forms, including the problems of snow and avalanches. This theme is not only of scientific interest. It is mainly a matter of practical necessity. A better knowledge about the torrent erosions, floods, mud flows and land slides, snow damages and avalanches is a basic condition for the rational use of protecting devices against these dangers of nature, may it be in the form of planning danger zones by eco-

conomic measures or by control constructions etc. This booklet should contribute to a quicker realization of the knowledge worked out in the world, to facilitate the exchange of experience and the international coordination of scientific work, and above all to inform those who are in charge of practical works. For this reason we have annexed a short outline about the issue of both meetings.

The IUFRO-Colloquium in Grenoble, France:

The IUFRO-Colloquium of the Subject Group S1.04-00 for torrents, snow and avalanches took place on the 2nd and 3rd June, within the frame of a joint meeting of related sub-groups of the FAO and IUFRO, from the first to the 6th of June 1981, in the Study-Centre for mechanized agriculture and for land-, water- and forestry engineering (C.E.M.A.G.R.E.F.) in St Martin d'Hères, Grenoble, France. The first day of this joint session was devoted to a symposium of the FAO/EFC/MW-Working Group of the European Commission of Forestry (E.C.F.) at the FAO. Six papers have been presented to the main theme of this symposium on "Torrent Control and Industrial as well as Touristic Activities".

At the directly following IUFRO-Colloquium about "Research in small torrential watersheds" 19 papers treated the following problems:

- Classification, torrential typology and geography
- Ecology and hydrology
- Torrent erosion inclusively land slides
- Bedload and sediment transport
- Snow and Avalanches.

From the 4th to the 6th June, there was carried out a study tour which brought 46 participants from 9 countries (France, Greece, Italy, Japan, Yugoslavia, Norway, Austria, Roumania, Switzerland, and also the FAO in Rome) to the French Alps, where in Savoy and in the Dauphiny, characteristic examples of torrent erosion, avalanches, afforestation and control constructions, as well as experimental and research works could be studied.

In the week which followed the joint FAO/IUFRO-Meeting in Grenoble, from the 9th to the 12th June, there was an additional study tour in Austria. 15 participants from three countries (Greece, Japan, Austria) visited three experimental watersheds in Salzburg and Carinthia. As example, we annex to this booklet, the guided tour to the Dürnbach/Neukirchen, in the Oberpinzgau, Land Salzburg.

Meeting of the Congress-Group in Kyoto, Japan:

At the XVII IUFRO-World Congress, from the 6th to the 17th September 1981, in Kyoto, Japan, the subject group S1.04-00 acted as congress group 1.4 for the problem range "Torrents, Snow and Avalanches". In four half-day working sessions, 45 participants from eight countries (China, Germany, Japan, New-Zealand, Austria, Pakistan, Switzerland, USA) discussed 15 subject lectures (6 invited papers and 9 voluntary papers), and 12 poster presentations to the following themes:

- Problems of erosion in Europe, USA and the Far-East
- Studies in experimental watersheds
- Erosion and utilization of the soil
- Stability of the slopes and problems of land slide
- Sediment transport and mudflow control
- Erosion and control constructions in volcanic regions
- Problems of avalanches in Europe and the Far-East
- Damages caused by snow, forest and avalanches.

The different lectures showed once more the interdisciplinary character of our subject topic. Despite regional differences, there are more common problems and methods of research as one could guess. In order to promote more the specialized collaboration world-wide, the subject group was re-organized and extended in its field of activity. Besides the already existing working groups for torrent erosion and torrent control as well as for snow and avalanches, two further working groups should deal specially with the stabilization of land slides and with erosion control by watershed management.

The second week of the Congress was devoted to excursions. The official 5 days Congress Study Tour No 3 was organized jointly for the Congress Groups 1.3 and 1.4, and comprised the complex "Control of Erosion and Forest-Hydrology". It led 44 participants from 21 countries to interesting Japanese research regions, regarding erosion, torrents and forest-hydrology, between Kobe in the south, and Nikko in the north.

Beyond the official Programme of the Congress, there were offered in Japan facilities to get acquainted with further spheres of torrent erosion, control constructions and regions of avalanches, as well as with Institutes of Research and experimental devices in the field, and all this naturally mainly in Central Japan, in and around Kyoto, in Tokyo, in the Tsukuba Science City, also in the Japanese Alps, and in the region of the Fujiyama (3776 m). In this context there is also to report a Seminar of the Japanese Torrent (Sabo)Control Society, which took place in Tokyo on the 19th September. It facilitated also the contact with other specialized circles, which are dealing in Japan with torrent control works besides forestry. We shall revert in detail to these different additional programmes at another place.

Thanksgiving:

At the end, we would like to thank all those who have contributed to the success of both arrangements, from the start up to the concluding publication. A special thank to all lecturers and speakers in the discussion, to the organizers with all their collaborators and interpreters.

The joint meeting of the FAO-IUFRO in Grenoble had been organized by the French Forestry Service and the French Association for Water and Forests. We have also to thank for the facilities, the uncomplained execution and competent collaboration, the French Representatives of the Service of Forestry, Mr. R. Blais, Paris, of the C.E.M.A.G.R.E.F. in St Martin d'Hères, Mr. Huchon, as well as the National Services R.T.M., Mr. L. de Crécy, both Grenoble, the President of the

FAO/ECF/MW-Working Party, Professor S. Munteanu, Roumania, and the Secretary of this Working Party in the FAO in Rome, Mr. L.S. Botero.

No pains were spared during and after the XVII IUFRO-World Congress in Kyoto, by the hosts, in executing the Meeting of the Congress Group, at the different excursions, activities of the Working Parties, and special study tours. We thank especially for the excellent organization, the interesting guided tours, and for the help that had been granted as well as for the hospitality: Professors H.Ishibashi, Morioka, Y.Tsukamoto, Tokyo, F.Komamura, Tsu, Dr. Nitta-Wakabayshi, Tsukuba, the Representatives of the University in Kyoto, Professors A.Takei and S.Kobashi, of the Disaster Prevention Research Institute in Uji/Kyoto, Professors K.Ashida and K.Sassa, the Directors and Chiefs of the related sections or departments of the Forestry and Forest Products Research Institute, of the Public Works Research Institute, of the National Research Center for Disaster Prevention in the Tsukuba Science City, as well as of the Institute of Snow and Ice Studies in Nagoaka, yet above all, also the responsables of the Japanese Torrent Control (Sabo) Service within the Ministry of Construction, Directors Y.Tsuruya and S.Okubo, Tokyo and all their collaborators.

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