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FOURTH INTERNATIONAL CONFERENCE ON GEOMORPHOLOGY - Italy 1997
Session: Applied Geomorphology

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SCOPE AND DEVELOPMENT OF APPLIED GEOMORPHOLOGY

INTRODUCTION

Several books and many papers have been written on the much discussed subject Applied Geomorphology and its evolution. One of the main consideration is that applied studies and the study of the processes og hand in hand in geomorphology, because the understanding of processes is essential for explaining geomorphological phenomena. Applied geomorphology developed on this basis and now emnraces many fields of application.

Also the IV International Conference on Geomorphology devoted an important session to the theme of applied geomorphology. Due to the large number of researchers working in this field the participation was so large that the session had to be split in two sub-session during which around 70 papers (posters and oral communications) were presented. These specific contributions covered a wide range of application fields in which geomorphology is used to solve praticak problems.

MAIN FIELDS OF APPLIED GEOMORPHOLOGY STUDIES

The application of geomorphology can be grouped under three headings, as follow:
a) *Environmental studies*. These may relate to specific fields of environment and earth science including the related thematic mapping and resources assessment issues. Examples are geomorphologic studies carried out in the frame work of geologic or soil surveying. The study may also relate to the environment as a whole such as investigations on the geomorphologic evolution during the Quaternary in the context of the international Geosphere-Biosphere Programme (IGBP) on global change aiming at predicting the future.
b) *Studies on the human impact on environment. These may relate to diffuse and possibly* gentle impacts or to concentrated and then usually violent impacts. Examples are to be found in geomorphologic studies for rural development and regional planning, or in research related to urbanisation and the implementation of engineering works. Research on accelerated erosion, land degradation and desertification, on coastel erosion and changes in river regimes due to human interference with the environment are well placed in the context of the Human Dimension of Global Environmental Change (HDGC) Programme that complements the IGSP programme.
c) *Studies on environmental hazards and disasters*. These studies relate to natural hazards of endogenous origin such as volcanic eruption and earth quakes and to natural hazards of exogenous origin such as floods, landslides, avalanches, etc. In many cases, inappropriate human interference with the environment is a triggering or aggravating factor. The research in this area is now being coordinated in the context of the international Decade for Natural Disaster Reduction (IDNDR).

The time scale usually applicable to applied geomorphologic studies decreases in the order of these three types: Environmental studies may encompass the entire Quaternary of the Holocene in other word the younger part of the geologic time scale; studies on human impact on environment may cover several millenia, centuries or decades, while geomorphologic studies on environmental hazards concern the shortest time span: intervals between pending hazardous events or the moment of instantaneous disaster.

Research related to these three major themes of applied geomorphology was presented in the poster session. The contributions covered a diversity of subjects varying from extreme floods events that change a fluvial system and affect the socio-economic conditions of social group (Kum

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