Planning of multi-functional forest road networks is one essential for meeting the needs of forest engineers. With this aim in mind, a new network planning approach was developed for wood-harvesting operations. A geographical information system (GIS) was used to evaluate the data and planning process. The new forest road network plan for the Cataki Forest District constituted the addition of a new road segment, total length 59.067 km, to the existing road network plan, for the purpose of wood-harvesting operations. The Forest Road Manual covers all aspects in the planning, design, construction and maintenance of forest roads. It has been written for the entire forest industry.

A.1.1 Forest roads

Forest roads in upland areas will be either contour, valley or connecting roads. Contour roads run at approximately the same elevation along their length and therefore will be, more or less, at a level grade. They are cut out of the hillside and are economical to construct. Connecting roads are those which join up the system into an overall road network. PHOTO 1: Old forest road network.

A.1.2 USE OF GUIDELINES

This manual is intended as a guidance document. During the planning process, one important task is to define the cable road layout. This means that the harvesting technology and cable road location must be specified for a given timber parcel. Although managers must minimize harvesting costs, it is even more important that such work on forests reduces the potential for damage to the residual stand and ensures that environmental conditions remain suitable for regeneration. However, current methods are geared only toward minimizing harvesting costs and are computationally demanding and difficult to handle for the end user. Swiss Federal Institute for Forest, Snow and Landscape Research (WSL), Forest Production Systems Group, Zuercherstrasse 111, CH 8903 Birmensdorf, Switzerland. 2. USE OF GUIDELINES

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