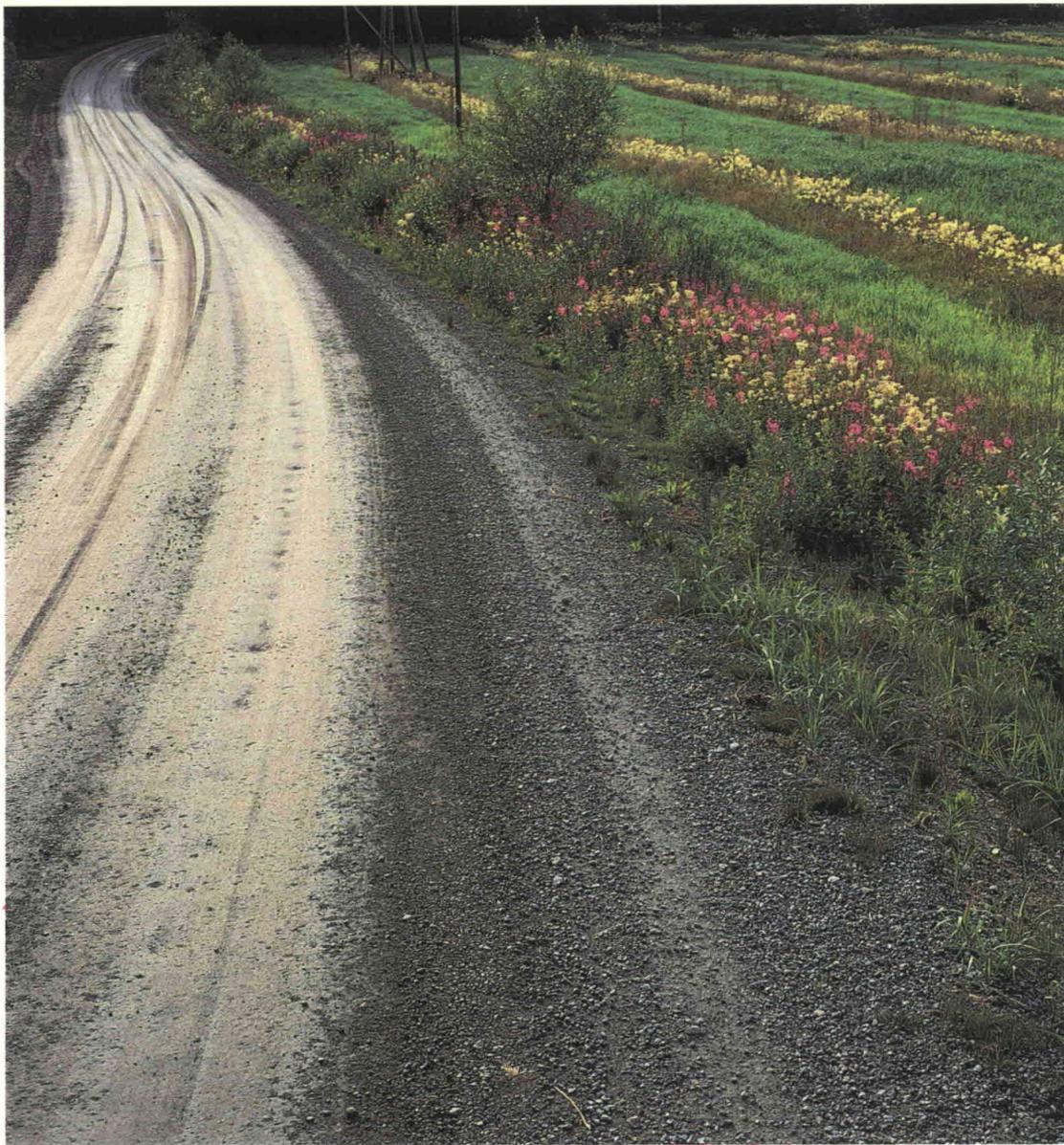




**Moving towards sustainability**  
**The Finnish National Road Administration**



08 TIEL / MOV



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## Finland is one of Europe's most sparsely inhabited countries

with only five million inhabitants to occupy an area of over 300,000 square kilometres. Forests cover some 70 % of the total area, lakes and wetlands 18 %, and farmland and built-up areas only 12 % between them. Consequently, environmental problems resulting from land use are not very extensive. Nor are they particularly serious in comparison with those elsewhere. On the other hand, the delicate ecology of this northern country with its long and severe winters is very sensitive to disturbance and needs to be treated with special care and respect.

Traffic congestion is minor and limited to major urban areas or their immediate vicinities. However, the combination of long internal distances and sparse population creates an unusually high dependence on road transport. Roads carried 94 % of passenger transport and 66 % of goods transport in 1994. Some 2.1 million cars and lorries clocked up a total mileage of 2700 million kilometres on public roads and 4500 million kilometres on all roads. On average, Finns travel 51 kilometres each day and spend 1 hour and 17 minutes doing so.

## The Finnish National Road Administration (Finnra)

is known abroad as a road maintenance organisation of high standards actively participating in international co-operation. Our experts can be found at environmental congresses and seminars, or taking part in working groups. The expertise acquired is demonstrated at international trade fairs and other events in the sector. Considerable investments are made in training our staff to meet international challenges, as well as in export activities. We draw on our own experiences to offer viable solutions to the problems of road administrations in other countries.

The built environment forms part of our culture. Whether we are developing existing roads or constructing new ones, our goal is a safe, functional, beautiful and unique environment.

We reduce disturbance and endeavour to conserve the environment by preventing adverse

effects at the planning stage.

Finnra focuses on co-operation between transport modes and efficient use of the existing road network. We co-operate on urban region transport system plans. The planning objectives are to reduce transport energy consumption and environmental damage, ensure public transport service levels and improve the safety and service level of pedestrians and cyclists.

We use environmentally compatible materials, products, methods and techniques. Their environmental impacts are assessed taking their whole life cycle into account.

We openly inform both the public and the authorities of our objectives and results. Co-operation and interaction are key words in sustainable development.

# The future is our responsibility



**Road maintenance and road traffic unavoidably affect the environment. Their impacts stretch far into the future and affect future generations.**

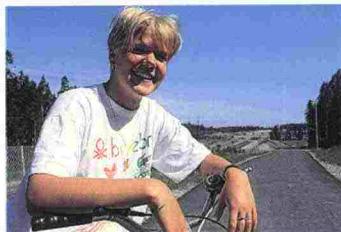
Finnra develops and maintains the public road network to ensure safe and efficient transport.

Finnra adapts itself to changes in its operating environment and paves the way for the future by developing its activities and by planning its work

coming generations and the beauty of the road environment are acquiring increasing significance.

It is no longer a case of eliminating environmental disturbance, this is now avoided at the outset.

Road traffic and road maintenance are seen as



sensibly to ensure adherence to the principle of sustainable development.

Our society constantly changes. International communications are increasing. International legislation is changing. At the same time, the EU is developing common traffic and environmental policies. Finland is affected by a growing number of international environmental conventions.

Both Finland and Finnra are actively involved in formulating environmental policy.

Human values and expectations also change. Environmental protection, responsibility towards

part of a transport system which is improved as a whole. Environmental responsibility constitutes a fundamental part of our activities. The aim is to reduce the need for travelling and transport and to increase the opportunities for pedestrian and bicycle traffic and public transport. Roads are adapted to the environment in an attractive manner that also conserves nature. The state of the traffic environment and environmental impact of road maintenance are extensively studied. Environmentally adapted, sustainable solutions are being sought through extensive research and development (R&D) work.



**Public participation in road planning and design, environmental guidance and policies, and environmental protection programmes, as well as environmental management, are elements in Finnra's environmental activities.**

# Involving people and communities



**Finnra influences the safety and comfort of our human society. Intensive co-operation produces a functional and environmentally sound community structure.**

Our business associates include not only road users and residents, but also municipalities, regional councils and other authorities, land-owners, representatives of various modes of transport, and numerous associations.

In road planning the rights of many private individuals and public institutions are affected. For this reason our planning is open and interactive. By weighing up the various viewpoints and by discussion it is possible to come up with better adapted solutions.

Integration of road maintenance programmes with regional environmental programmes is of crucial importance. Common effort is also indispensable in land use planning. By working together it is also possible to inform road users in the most efficient way.

Traffic system planning gathers the resources of different parties together to achieve common objectives. A good example of this is the integration of bus, train and taxi services at travel centres, making it easier to transfer from one mode of transport to another.

## A good traffic system

- ▶ reduces the traffic demand
- ▶ relieves the pressure for constructing new roads
- ▶ increases the opportunities for pedestrian and bicycle traffic
- ▶ reduces traffic energy consumption, emissions and noise
- ▶ assists in preserving the special aspects of an area (e.g. nature reserves).

Environmental impact assessment (EIA) forms an important part of road planning. Finnra has been applying the methods of the EIA Act since 1992. The law was adopted in 1994.

## Impact on people

- ▶ health
- ▶ living conditions
- ▶ well-being and comfort

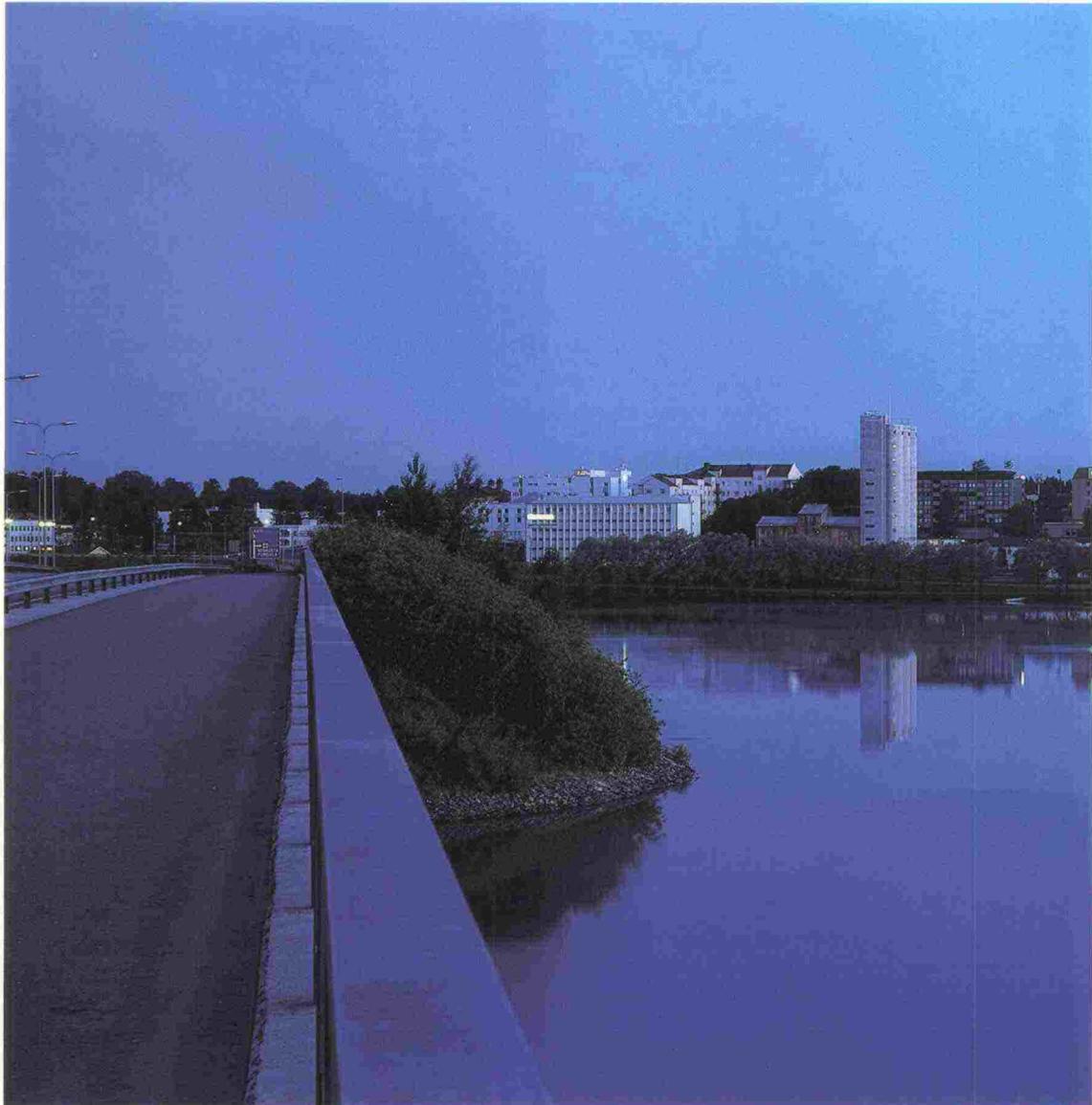
## Impact on urban development and land use

- ▶ urban structure
- ▶ landscape and townscape
- ▶ cultural heritage

## Impact on nature

- ▶ valuable areas and habitats
- ▶ sustainable use of natural resources
- ▶ biodiversity

Finnra brings services to road users for increasing their safety and comfort. Resting areas, cycle routes and recycling facilities can be used by everyone.



**The views of people affected by public roads assist in finding generally acceptable solutions which increase the comfort of the living environment.**

# Using less to yield more



**By making use of the latest technology it is possible to produce more from less, conserving natural resources.**

We increase the use of recyclable and more environmentally adapted materials, recycle products and materials created by our own activities, and modernise work methods. The use of gravel and sand in road building is being reduced. In-site building techniques and previous structures are utilised as fully as possible. Industrial waste and by-products are also put to good use in road and bridge construction.

We are giving up tarmac and road marking materials containing volatile hydrocarbons, while the use of solvents for cleaning road construction equipment is being reduced. Conventional substances for hydraulic systems and lubrication are being replaced by biologically degradable ones. Bridge painting waste recovery is constantly improved.

Hazardous wastes are stored safely and dispatched to the hazardous waste facility. Other wastes are sorted and as far as possible recycled. Products made from recycled materials are favoured.

Improving road safety makes the use of road salt unavoidable in counteracting slippery road conditions. However, the harmful impact on the environ-

ment can be minimised through proper countermeasures. The amount of salt can be reduced through minimisation and groundwater can be protected by suitable road constructions.

The provision and maintenance of natural roadside flora helps to retain biodiversity.

The methodical use of advanced technology and attention to environmental issues in road maintenance have resulted in many forms of product and expertise for the export market.

#### These include

- ▶ Environmental Directives, Regulations and Policies
- ▶ Public Participation in Road Planning
- ▶ Environmental Protection Programmes

- ▶ Environmental Impact Assessment (EIA) of Roads and Bridges
- ▶ Environmental Management
- ▶ Environmental Surveys
- ▶ Training in Environmental Issues

- ▶ Environmentally Friendly Maintenance Technology and Methods
- ▶ Noise Protection Surveys
- ▶ Groundwater Protection Systems
- ▶ Protection of Endangered Species
- ▶ Protection of Valuable Landscapes and Historical Sites



**With the Remixer method, the old surface material is recycled. This permits 80 % savings on new material.**

# Researched information, planned activities



We gather data on the impact of road maintenance and traffic by means of studies and surveys. At the same time we apprise our own personnel, partners, and all road users of Finnra's environmental thinking and work.

In 1991 Finnra launched nationwide surveys on the state of the road environment.

#### Surveys have been made on

▶ noise abatement	1992 - 93
▶ groundwater protection	1992 - 93
▶ air quality	1993 - 94
▶ urban areas	1993 - 95
▶ nature, landscape, cultural history	1994 - 95
▶ urban districts	1995 - 96

These surveys will form a foundation for methodical road environment enhancement.

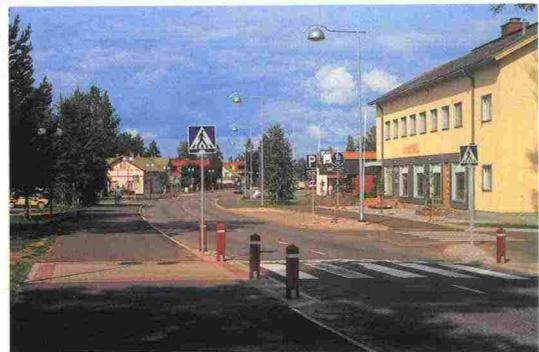
The significance of the environment in R&D activities has markedly increased during the 1990s. More than 10 % of our annual R&D budget is devoted to work on the environment.

Finnra is currently integrating an environmental management system with its overall quality sys-

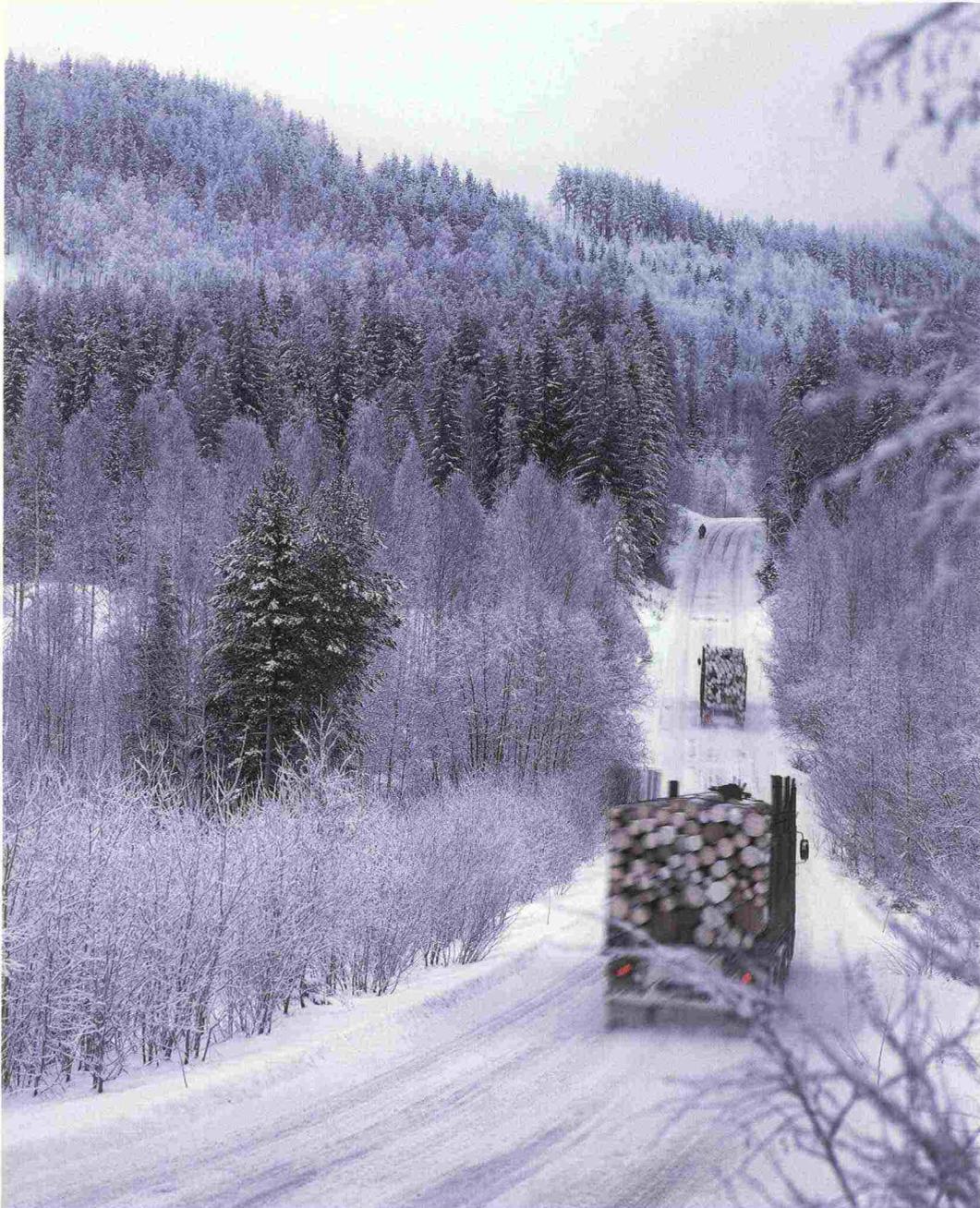
tem, covering environmental policy and programmes, the resources required and implementation, as well as follow-up. Finnra will publish an annual report on the environmental impact of its activities.

Finnra engages in wide ranging co-operation with universities and research institutes. GIS (Geographical Information System) Databases are being developed for endangered animal and plant species, groundwater areas and other protected habitats.

Keeping abreast of state-of-the-art technology, Finnra participates in the international communications network and Technology Transfer (T2) and World Interface Network (WIN). The Nordic T2-link network node operates in Finnra. This node is also the focal point for the Baltic T2 networks.



The traffic arrangements of Rantasalmi village in eastern Finland were improved in 1993.  
Views before and after.



**Research has produced maintenance methods and planning models for reducing environmental impact. These methods and models are now being implemented in Finnra's operations and they form part of our expertise.**

# International activities



The international activities of Finnra are implemented by two divisions, International Relations and Export Services.

Institutional co-operation and participation in the work of international organisations are co-ordinated by the International Relations division whereas the Export Services division implements projects on a commercial basis.

Finnra has been active in a number of countries since 1979. During the past decade the focus of Finnra's project work has been on Africa. Today Finnra is mainly involved with projects in the Eastern European countries and in the Far East.

## International relations

Finnra participates in the work of most major international and Nordic cooperation organisations in the transport sector. Among these are:

PIARC, the Permanent International Association of Road Congresses,

ICHCA, the International Cargo Handling Coordination Association

IRF, the International Road Federation  
TRB, the Transport Research Board,  
PIANC, the Permanent International Association of Navigation Congresses,  
various work groups in the OECD, ECE and UNCTAD.

An important form of co-operation is participation in the activities of international bodies and research organisations, in environmental congresses, seminars and working groups.

These activities keep us up to date with the latest developments worldwide on environmentally friendly maintenance technology and methods, noise production surveys, groundwater protection systems, the conservation of endangered species, and the protection of valuable landscapes and historic sites.



### **Export Services**

Export Services is a financially independent division of Finnra, which provides consulting services for transport and maritime sector projects worldwide. The scope of the work covers technical assistance for the institutional development of highway and maritime administrations. The planning of training and the development of internal training programmes are handled by IHME, a sub unit of Export Services.

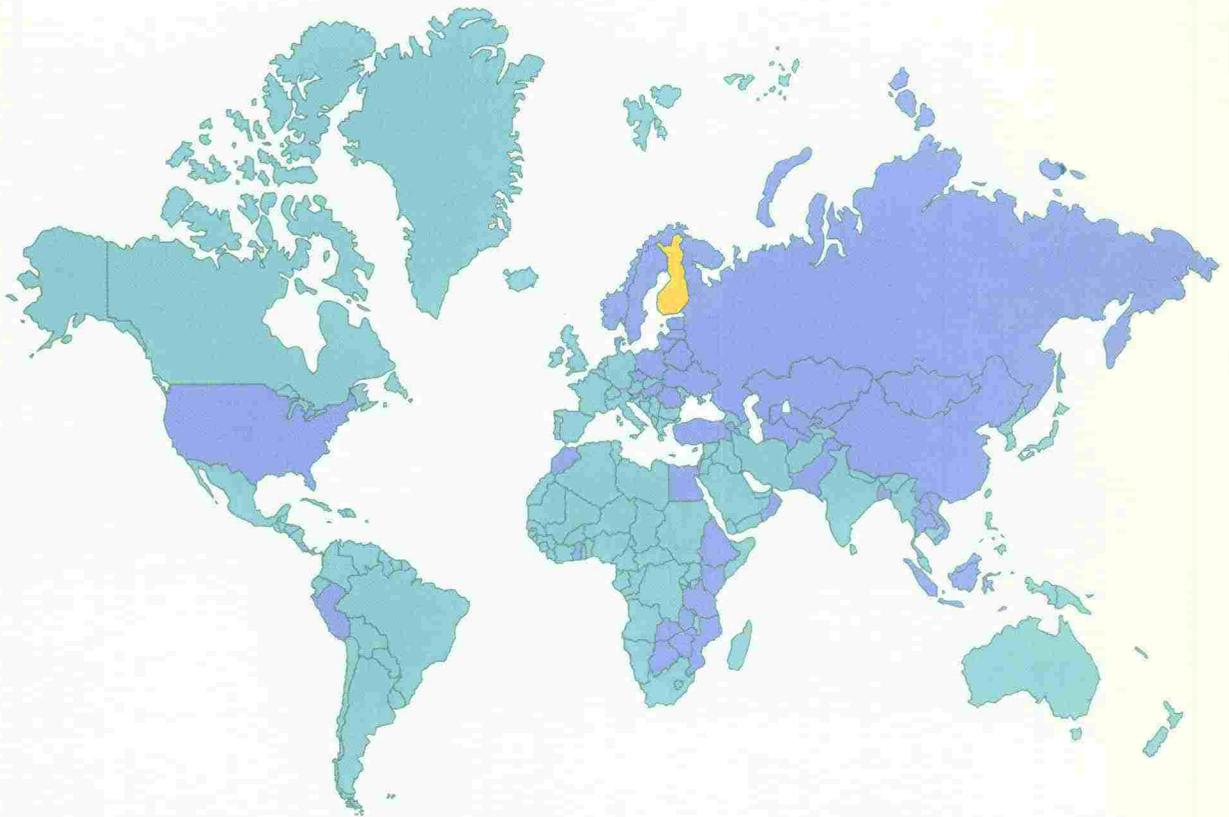
### **Institute for Highway and Maritime Education (IHME)**

The Institute for Highway and Maritime Education (IHME) of the Finnish National Road Administration is a post-graduate training institute specialised in providing training consultancy services and organising training courses, workshops and seminars within international transport sector programmes and projects. IHME is experienced in organising training courses in Finland, as well as in various countries of cooperation.

Professionals within the transport sector today face a wide array of fresh challenges in their field. Continuous education and training has always been seen as an instrumental factor in the mobilisation of change, creating a work force which is responsive to the new demands for effectiveness, enhanced productivity and economical thinking while being proficient in state-of-the-art technology and professional management techniques. Well targeted training activities can serve as a catalyst which – when successfully disseminated – will have a multiplying effect throughout the organisations.

IHME's courses are tailored to meet the client organisation's and the trainee's needs, wishes and priorities. Usually the courses last from 2 to 4 weeks, but they can also run for several months. The institute is responsible for the planning of the programme in cooperation with the various parties and for conducting training, while at the same time dealing with the practical arrangements involved in taking care of trainees.

# Project Countries 1979-1996



## **Finnroad Ltd**

Finnroad is a joint venture between Finnra, Viatek Ltd, LT-Consultants and Finnish Consulting Engineers. The combined knowledge of Finnra and its partners gives Finnroad the ability to offer its services for all kinds of transport projects. The Finnroad group has over 30 years of international experience

in highway, bridge, railway, airport and port projects.

High priority has been given to improving exports and international contacts. Finland's entry into the EU will bring new challenges to Finnra, but also greater co-operation for expanding business activities. Co-operation with neighbouring areas has also continued unabated.



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THE NEW NUMBER FOR FINNRA AFTER OCTOBER 12th WILL BE +358-204 44 11

PLEASE NOTE that area codes will change all over Finland on October 12th 1996.



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**Finnra**