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## **Norway's damaged concrete dams**

**Norwegian concrete dams need repairs that will cost billions of kroner, concludes a new report on the state of Norway's concrete dams.**

Norwegian concrete dams need repairs that will cost billions of kroner, estimates SINTEF research scientist Viggo Jensen, who has just issued a report on the state of Norway's concrete dams. Jensen believes that there is relatively high incidence of damage on many such dams. The reports summarises the results of a nation-wide questionnaire study which was sent round to managers with technical responsibility for dams, and which is regarded as being representative of the condition of Norwegian dams. The relatively large scope of the damage needs to be considered in the perspective of the fact that more than half of the dams are more than forty years old. "To questions about safety, measures that had been put into effect and how damage was evolving the respondents replied that major rebuilding of eight percent of the dams will be needed in the near future, while a further five percent ought to be pulled down or reinforced. The managers reported plans for improvements to the tune of MNOK 2.5 billion, but only twelve percent of them actually came up with figures for the cost of future repairs, so I believe that the total cost will be very much higher", says Jensen.

The study shows that dams built in the 50s and 60 suffered most damage. There are several possible reasons for this: this was the period in which by far the greatest number of dams were built, so that high pressure on the building process may have affected quality. The stricter regulations that subsequently came into force also resulted in longer-lasting dams.

Another interesting point that emerged from the study is that ten percent of the repairs that have already been carried out were made more than once on the same dam.

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