

## HOW TO IMPROVE THE TRAFFICABILITY OF RURAL ROADS IN DEVELOPING COUNTRIES

How can the trafficability of rural roads be improved? Our approach is "To enable African people to solve their problems by themselves". As a first step of this specific strategy, the authors developed a maintenance method for unpaved roads using "Do-nou", a Japanese term for a soil bag. The bearing capacity of "Do-nou" was specified by Prof. Hajime Matsuoka in the Nagoya Institute of Technology. The authors have started a study to apply the theory of "Do-nou" to rural road maintenance in Africa with the understanding of Prof. Matsuoka.

Even in rural areas of developing countries, woven bags using string made from polypropylene are commonly found. These bags are used for packing fertilizer, feed, seeds, and crops for sale. The empty used bags are utilized for packing and transporting other goods. Sometimes, the bags can be seen filled with soil and used for reinforcing a flat space raised above ground level for selling in markets along main roads. These second hand bags are sold in street stalls at a price ranging from 0.1 to 0.3 US\$.

The sizes of the bags vary from 10 to 90 kg. A 20kg bags are the most convenient to maintain roads, because they are easy to transport and lay properly in terms of the weight and size after the bags are filled with soil. Moreover, they exhibit sufficient tensile strength to bear the tension generated during the loading of traffic and compaction.