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Editor

David Dixon
"Carpenters", Chetnole
Sherborne Dorset
DT9 6PF, UK

Tel: +44 (0)1935 872 695
dixon david2@sky.com

Consultant Editors

John Madeley
George Macpherson

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Research Information Ltd
Grenville Court, Britwell Road,
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Tel: +44(0)1628 600499

Fax: +44 (0)1628 600488

info@researchinformation.co.uk
www.appropriate-technology.org

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Contents

REGULAR FEATURES

- 4 **Comment: World farmers have a new leader**
5 **News briefing**
9 **Health matters**
14 **Agriculture**
23 **Forthcoming**
24 **GIZ Deutsche Gesellschaft für Internationale
Zusammenarbeit (GIZ) GmbH**
26 **Practical Action Technical Brief**
30 **Broadbrush by John Madeley**
- 19 **Roads**
Community groups take to the roads
21 **Forestry**
Forests sustain rural poor
Forest ownership rights can improve peoples' livelihoods
32 **Integrated pest management**
Maize which protects itself
Push-Pull: a model for Africa's green revolution
38 **Water**
Mallanna saves farmers from cruel sun
41 **Marketing**
Malian farmers use radio and phones to sell non-timber products
43 **Innovation**
Facing new challenges
47 **Awards**
Congolese gynecologist, Dr. Denis Mukwege, wins this year's King
Baudouin International Development Prize
48 **Ashden Awards for sustainable energy**
Abellon CleanEnergy, India
Aga Khan Planning and Building Service, Pakistan
ToughStuff International UK and Africa
Husk Power Systems
Toyola Energy Limited, Ghana
The Runners - up

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Front Cover: Aware of the high risks of contracting pneumonia, Josephine Anyango, aged 21, and her 11-month-old daughter Michelle, were one of hundreds of mothers who queued to get their children vaccinated in a national immunisation programme in Kenya supported by the GAVI Alliance.

Credit GAVI Alliance (see page 10)

Community groups take to the roads

Roads in mountainous areas are exposed to accelerated deterioration from flowing water and landslides, often exacerbated by a lack of adequate road protection measures. As a result, communities are often cut off for part if not all of the year. In Nepal for instance, only less than half the rural roads in mountainous areas are considered to be usable, and many more are impassable during the rainy season. Continued access can only happen if there is regular maintenance of the rural road network. A report by Serge Cartier van Dissel.



A women's maintenance group removing a landslide in China

Credit Serge Cartier van Dissel

In Nepal and China (Yunnan province), pilot projects were carried out in 2009 and 2010 to introduce community-based routine road maintenance, with funding from the International Labour Organisation (ILO) and the Asian Development Bank (ADB) respectively. Maintenance groups were formed and contracted to carry out maintenance activities on a continuous basis. Whereas in Nepal mixed groups (35 percent women) were formed and hired full-time, in China women's groups were formed that were hired part-time, allowing the women to combine the maintenance work with other responsibilities.

The maintenance groups are respon-

sible for the clearing and cleaning of the different road elements, ensuring the proper working of the drainage system and the removal of landslides. Small repairs to the road surface and shoulder are also included to avoid continuous damage and improve road conditions.

Moreover, in both countries, it was decided to introduce additional protection measures, especially side drains and dry-stone retaining walls, as the lack of such measures was resulting in accelerated damage to the road. These activities have resulted in a significant improvement of road conditions, in some instances even leading to the introduction of public transport services. They have also resulted in more

continuous access, with roads being closed for fewer days a year (generally 1-5 days compared to more than 30 days before the projects).

The poor conditions of most mountain roads in Nepal and China meant that monthly workplans had to be prepared to define the scope of work to be carried out by the maintenance groups. This increased the supervision costs, which is a major concern in light of the limited capacity of local authorities. Once road conditions have improved and additional road protection measures have been put in place where required, performance-based contracting can be introduced, which has the benefit of reducing supervision needs as the

work is planned by the groups themselves. This is currently being piloted in China.

In Nepal, the costs came to approximately \$500/km/year and it is expected that it can be further reduced once road conditions are improved and additional protection measures are in place, making it compatible with the official norm for routine maintenance of \$430/km/year. In China, the first pilot project resulted in an average cost of \$800/km/year. A second pilot project is looking at limiting costs by excluding emergency maintenance and extensive surface repairs, to determine if the currently available funding level of \$400/km/year is sufficient to ensure replication.

Approximately 80 percent of the maintenance cost covers salaries, with the remainder spent on tools, safety equipment, accident insurance and materials. In a rural context where few income earning opportunities exist, especially for women, these salaries were very important for the maintenance workers and their households, effectively lifting them over the poverty line.

Although most of the income was spent on food, workers also made investments in better education for their children, the purchase of livestock and the construction of houses. Additional training in productive activities is now also being piloted in China as a means of increasing the impact of such investments, although this included significant emergency maintenance and extensive road surface repairs.

Serge Cartier van Dissel is an independent consultant working for different development organisations.

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For more information contact Serge Cartier van Dissel, Cartier Consult, Jamsikhel, Kathmandu, Nepal. Tel: +977-1-5529990; +977-9803927845; E-mail: serge.cartier@cartierconsult.com; Website: www.cartierconsult.com



A maintenance group creating a side drain in Nepal

Credit Serge Cartier van Dissel



A maintenance group repairing a pothole in Nepal

Credit Serge Cartier van Dissel