

1. Why do you think this project should receive an award? How does it demonstrate:

- **Innovation, quality, and professional excellence?**
- **Transparency and integrity in management and project implementation?**
- **Sustainability and respect for the environment?**

IMC Worldwide first started work on the UK Aid-funded Rural Access Programme (RAP) in 1999; designing it as a comprehensive poverty alleviation programme, using the construction of 'green road' technology transport infrastructure as an entry point for improving the lives of the poorest and most marginalised people in remote areas of Nepal. Now in its third phase, RAP's longevity and enduring impact is testament to the strength of its creative design and capacity to evolve, rooted in the FIDIC principles of quality, integrity and sustainability. This submission is focused on the programme's second phase, RAP 2 contract, which commenced in 2008 and was completed in 2013. IMC Worldwide was responsible for the technical and financial management of RAP 2.

Innovation, quality, and professional excellence

With over one-third of its population living below the poverty line and a GDP per capita of just USD 1,300, Nepal is one of the poorest countries on earth. Situated high in the Himalayas, the country's varied topography means it is intensely vulnerable to climate change and natural disasters. Soil erosion, landslides, flash floods and, as the world witnessed in April 2015, earthquakes are common. A decade of bitter armed conflict and years of subsequent civil disorder have left a fragile political climate that only compounds the population's social vulnerability. Some 80% of Nepal's 27-million people are trapped in subsistence agriculture and poverty. One reason for this trap is an acute lack of basic road access in rural Nepal. RAP 2 focused on building and maintaining roads in seven of Nepal's poorest mid-hill districts, giving isolated communities access to health care, education and markets. Perhaps what set it apart from similar infrastructure development projects was its innovative focus on using asset construction to secure sustainable livelihoods for these poor and marginalised people.

The programme employed a labour-based approach to construction of 396km of new roads, two major river bridges, 185 discrete rural infrastructure assets, and three market centres; and initiated maintenance works through local government agencies on 1600kms of rural roads. Furthermore, 97% of the labour force was made up of Dalits (traditionally regarded as untouchables) and Janajatis (landless indentured farm labour) or similarly disadvantaged groups and 43% of workers were women. This innovative approach led to RAP 2 exceeding both targets and expectations by creating 7.9 million employment days for 15,000 people from the districts' poorest households, and distributed GBP 17 million (or 60% of RAP 2 budget) in wages using RAP 2-established community organisations.

The community organisations formed to manage and construct the infrastructure underpinned RAP 2's social, skills development and income generation interventions, and provided the basis for group-managed credit and savings schemes to encourage the productive use of waged income. The schemes have already demonstrated a measurable impact in the development of a savings culture among communities who never before earned wages.

The schemes also provided the seed money for inter-group lending – affordable fixed interest loans which offered a real alternative to the high rates charged by loan sharks (upwards of 40%) - endemic in rural Nepal. These loans were often used to fund income generation initiatives which are now facilitating the shift from subsistence to diversified farming. RAP 2 actively spearheaded these pioneering initiatives, by strengthening the capacity of local lead farmers to provide training for improving yield and diversity of crops through better management of land and livestock resources; and for improving irrigation and supply chain infrastructure.

Further innovation is demonstrated in RAP 2's green road approach to sustainable rural road construction, which is aimed at protecting the fragile slopes by the preservation of as much existing vegetative cover as feasible. The green road approach is characterised by its phased construction sequence that starts with a narrow track that is sequentially widened over several construction seasons to the required road width – this minimises landslips and erosion. Environmentally friendly construction methods, usually labour based, minimise slope cutting and promote proper water management and the use of bio-engineering techniques to retain fill areas.

RAP 2's innovative approach was underpinned by quality and professional excellence in all interventions but is perhaps most readily demonstrated in the programme's bridge component. Constructing two 120m single span steel truss road bridges in the UK would be relatively straightforward but doing so in one of the most remote and inaccessible areas of Nepal in record time is a fantastic planning, engineering and logistical achievement.

For the subsistence-farming inhabitants of Eastern Nepal, the burden of poverty was, until recently, made greater through being cut off from basic necessities by the Sabha Khola and Arun Rivers. No bridge meant limited and unsafe access to essential commodities – rice, cooking oils, fresh vegetables, medicines and fuel; and little hope of reaching the regional airport for evacuation to Kathmandu in an emergency. The completed bridges, therefore, offer a genuine lifeline to the hundreds of thousands of people living in Eastern Nepal, with new-found access to market boosting livelihoods and thus significantly aiding poverty reduction.

At 120m, the identical bridges are currently the longest single span steel trusses in Nepal. The whole project took less than two years from the first excavation of the Sabha Khola Bridge foundations in November 2011 to the opening of the Arun Bridge in October 2013. In Nepal, a single bridge with a far shorter span usually takes between five and seven years to construct. This unprecedented timescale can be attributed to IMC's professional excellence, working closely with the Nepali contractor to identify potential programme bottlenecks and advising on timely and effective mitigation measures to overcome them.

Speaking at the official opening, UK Minister of State Alan Duncan called the Sabha Khola bridge “a lifeline for the five million people living in Eastern Nepal”, and in a recent speech at the London Stock Exchange, Secretary of State for International Development, Justine Greening, flagged up the Sabha Khola and Arun River Bridge project as a successful example of how “British companies can have a real role in growing developing economies through trade.”

Besides improving the lives and livelihoods of local inhabitants, the Sabha Khola and Arun Bridge project has enhanced the reputation of the engineering profession both in Nepal and UK on account of the speed and quality of bridge construction and the excellent safety record, with no significant

injuries or fatalities. The project has also demonstrated to the Nepali government that with proper planning the construction of sustainable bridges that have minimal impact on the environment can be achieved using existing locally available technology.

Transparency and integrity in management and project implementation

Transparency and integrity were mainstreamed into all RAP 2 activities, procedures and outputs, as they are into all aspects of IMC Worldwide's work. Corruption in Nepal is a serious problem and the RAP 2 team recognised that educating communities, government and partners on what constitutes corruption and about the negative impact it has on sustainable development was as important as policing it. To this end, its integrity and anti-corruption approach comprised a range of standard controls such as rigorous risk assessments, monitoring requirements and financial controls; transparency measures such as a commitment to publishing reports and policy documents on its website; staff training and community awareness raising on different types and impacts of corruption; robust mechanisms for reporting instances of corruption – accessible to all regardless of gender, caste or position; and clear guidelines on the correct course of action should any instance of corruption be suspected. The project also introduced the use of public auditing of the project roads to encourage the community participation in controlling corruption by making the construction transactions transparent.

To maximise transparency and integrity in the bridge component, the FIDIC Design and Build form of contract was used for procurement. The original terms of reference for the construction of the RAP 2 bridges over the Sabha Khola and Arun Rivers envisaged that the consultant would carry out a review of the original bridge designs, incorporate any changes to enhance the quality, sustainability and buildability of the proposed structures and move forward to procure and supervise the construction. The consultant team, however, concluded after analysing the existing designs, that the designs for both bridges were either unacceptably detrimental to the environment, were difficult or impossible to construct using locally available construction techniques or the designs were based on incomplete survey data.

There was a pressing need to maximise the benefits from UK Aid's previous investments in the road infrastructure for around quarter of a million rural residents in five of Nepal's most rural eastern districts and it was therefore important to minimise the time taken to complete the project. The need to minimise the time to prepare detailed designs and then procure a contractor led logically to the adoption of the FIDIC Design and Build form of Contract, (Yellow Book).

It was clear that the use of this well-known and respected form of contract would offer the shortest procurement solution by enabling the contractor to offer innovative construction solutions that could be incorporated in his overall design, i.e. by enabling the designer to prepare a design to a particular erection methodology. The use of the FIDIC form of contract also ensured that the key features of the structures, span, materials, design and design checking, maintenance details and key environmental safeguards could be incorporated into the final design by specifying these in the Employers Requirements

It was important to ensure that the contract procurement was transparent so it was decided from the outset that the contract would be procured using the Nepal Department of Roads established E-

Tending system that would enable international firms to compete with confidence whilst minimising the danger of local cartels artificially raising the cost of the works.

It was critical that the zero tolerance approach to corruption was carried forward through the construction phase. The use of the FIDIC Design and Build form of Contract with lump sum pricing already minimises the occurrence of measurement errors and claims but the consultant also carried out anti-corruption training for both the Engineer's and Contractor's site staff to ensure that quality of the work was a priority and that everybody had a common understanding on the acceptable level of behaviour.

The use of the FIDIC Design and Build form of Contract also encourages the participatory approach by the Engineer and Contractor's project teams as it encourages the Engineer to work closely with the Contractor to identify risks, mitigate their effect and solve site issues without the pervasive threat of claims.

Sustainability and respect for the environment

Respect for the environment was embedded in each of RAP 2's core components. Design standards for roads and other economic infrastructure included climate change adaption and disaster resilience features, and environmentally sound construction techniques were used throughout. Further commitment to sustainability is demonstrated in RAP 2's holistic approach to improving the long-term livelihoods of the communities it worked with. From the outset of each intervention, the community affected was empowered to manage the construction process itself, and facilitated in maximising opportunities the new roads provide. In essence, RAP 2 aimed to leave communities not just with new roads and better access to health, education and market facilities, but with the knowledge, skills and confidence to manage their own development in the future.

In terms of the sustainable impact of RAP 2, earlier RAP social impact studies show increases in incomes by 220%, expenditure by 129% and agriculture yield by 200%. Furthermore, there is a reduction in transport costs of 30% and an increase in school enrolment of 80%, especially of girl children. The unexpected outcome was the increased participation of women in local development and household decision-making.

Sustainability can also be seen in IMC Worldwide's conceptual design for the Sabha Khola and Arun River bridges. The steel truss obviated the need for foundation construction in the river, as the abutments were founded on rock outcropping along the chosen bridge axis. This effectively removed one of the main causes of premature bridge failures in Nepal – erosion of foundations during high river floods. The design also offered robustness to climate change as the bridge soffit level was set at over 2.5 metres above the predicted 100-year return flood. Perhaps the most significant impact of the bridges is the access to market they provide – giving hundreds of thousands of households the chance to transition from vulnerable subsistence to more sustainable livelihoods. The bridges were built to withstand seismic effects and both were undamaged during the major earthquake in April 2015.

Another RAP 2 component, the Road Transport Infrastructure Maintenance pilot also championed sustainability by focusing on boosting local governments' capacity to maintain those roads already built – ensuring the long-term sustainability of Nepal's infrastructure and thus safeguarding access

to market, health and education for rural communities. This component was instrumental in introducing a culture of road maintenance in Nepal where 'build and forget' had become normal practice in all national district road programmes.

What services did IMC Worldwide provide to the project?

IMC Worldwide was responsible for providing the technical and financial management of all RAP 2 components. The programme combined infrastructure construction with institutional and staff capacity building and supported the harmonisation of donor support into a Sector Wide Approach (SWAp). It included capacity building and institutional support to develop local government capacity and benchmark district performance. IMC also provided technical advice on donor coordination, alignment with government systems and supported the design of the SWAp.

At the project level, services delivered by IMC included direct management of construction work and support for those funds channelled through local government systems for maintenance work. The RAP 2 team managed the accounts for the payment of works and other procurement, and ensured that technical best practices were adopted in design and on site with respect to pro-poor, labour-based, environmentally sound and participatory approaches. RAP 2 also piloted a payment by results mechanism, meaning the team was also tasked with continual monitoring and reporting against agreed milestones to secure ongoing funds. This pilot was proved effective, so DFID went on to adopt it for the current phase – RAP 3.

Recent follow-up case studies of RAP 2 communities have revealed a positive picture of improved access for previously isolated villages and enhanced livelihoods opportunities. To take just one example, 18-year-old Saraswati and her 28-year-old brother Padam own and run a popular shop in the village of Turmakhand, Accham, Western Nepal (see image 5). Originally set up six years ago using money that Padam saved from his RAP 1 wages – Saraswati's RAP 2 wages have also been invested in the enterprise to great effect. Business has markedly improved since the RAP 2 road through the village was completed as there is much more passing trade. The shop now brings in enough to support themselves and their parents and also to pay Saraswati's tuition fees – she is currently studying for a Bachelor's Degree in the nearby town of Mangelsen and is able to make the journey to and from college each day via the new road.