Where aid fails, appropriate technology can succeed

February 9 2016, by Peter Logan, University Of Technology Sydney

Even something as simple as a water pump might not work if it requires parts or power not readily available where it's installed. Credit: World Bank, CC BY-NC-ND

Technology can be a wonderful servant but a terrible master. As we know, its applications are not always beneficial to people or to the environment.

Recently we have seen concerns raised around fracking in rural

Queensland, <u>nuclear waste</u>, or perceptions of <u>health problems</u> from <u>wind farms</u> in South Australia.

The situation in developing countries is just as concerning to many people, where technologies are transferred to communities ostensibly to improve their quality of life, but are often rolled out without consultation with the community.

According to electrochemist and pioneer of the "appropriate technology" movement, <u>Amulya Reddy</u>, technology can be <u>compared to genetic material</u>): if placed in a new environment, it will reproduce the society from which it originally came.

Humphrey Blackburn, an engineer, commenting on one of the <u>Bill & Melinda Gates Foundation</u> technologies also <u>warned</u>:

It will cease working when parts break, chemicals are not readily available, power fails, the technical expertise is not around, or the financial assets are not reliably available.

Clearly, technology needs to be made appropriate to its environment, and to the culture and community it is intended to serve. This has been known for quite some time, but it's still not widely put into practice today.

Micro-hydro installations, such as this one in Indonesia, are appropriate for their environment and community needs. Credit: People Centred Economic and Business Institute (Institut Bisnis dan Ekonomi Kerakyatan, IBEKA), Author provided

'Appropriate technology' discovered

The notion that technology can fail when airlifted into a different environment resonates with my own experience. When I was teaching in Papua New Guinea (PNG) in the 1970s, an attempt was made to "help" the local villagers to pump water using a hydraulic ram.

Previously, the women had carried the water from the river. So when the ram failed because it wasn't maintained, the women had to revert to carrying water. This was an example of the university staff determining what the villagers needed without adequate consultation.

Soon after that experience, E. F. Schumacher published [Small Is Beautiful: Economics as if People Mattered](), and the emphasis changed to what was dubbed "appropriate technology".

To be appropriate, a technology must be appropriate to the environment, the culture and the economic and educational resources of the people.

It should meet the technical, social and economic needs of the community by: being a capital-saving, employment-generating technology; being a small-scale technology; using local materials and energy resources; using existing or easily transferable skills; minimising social and cultural disruption; producing goods appropriate for mass consumption in adequate quantity and acceptable quality; and involving a rational sustained use of the environment.

So when a request came from another local PNG village for electricity, a micro-hydro project was initiated in which the villagers contributed to the project with money and labour.

Following this, a group came together and produced a book of appropriate technologies for PNG called the "Liklik Buk". The aim of this book was to make people throughout PNG aware of what was available and where help could be obtained.

LIKLIK BUK

a sourcebook for development workers in
Papua New Guinea
2003
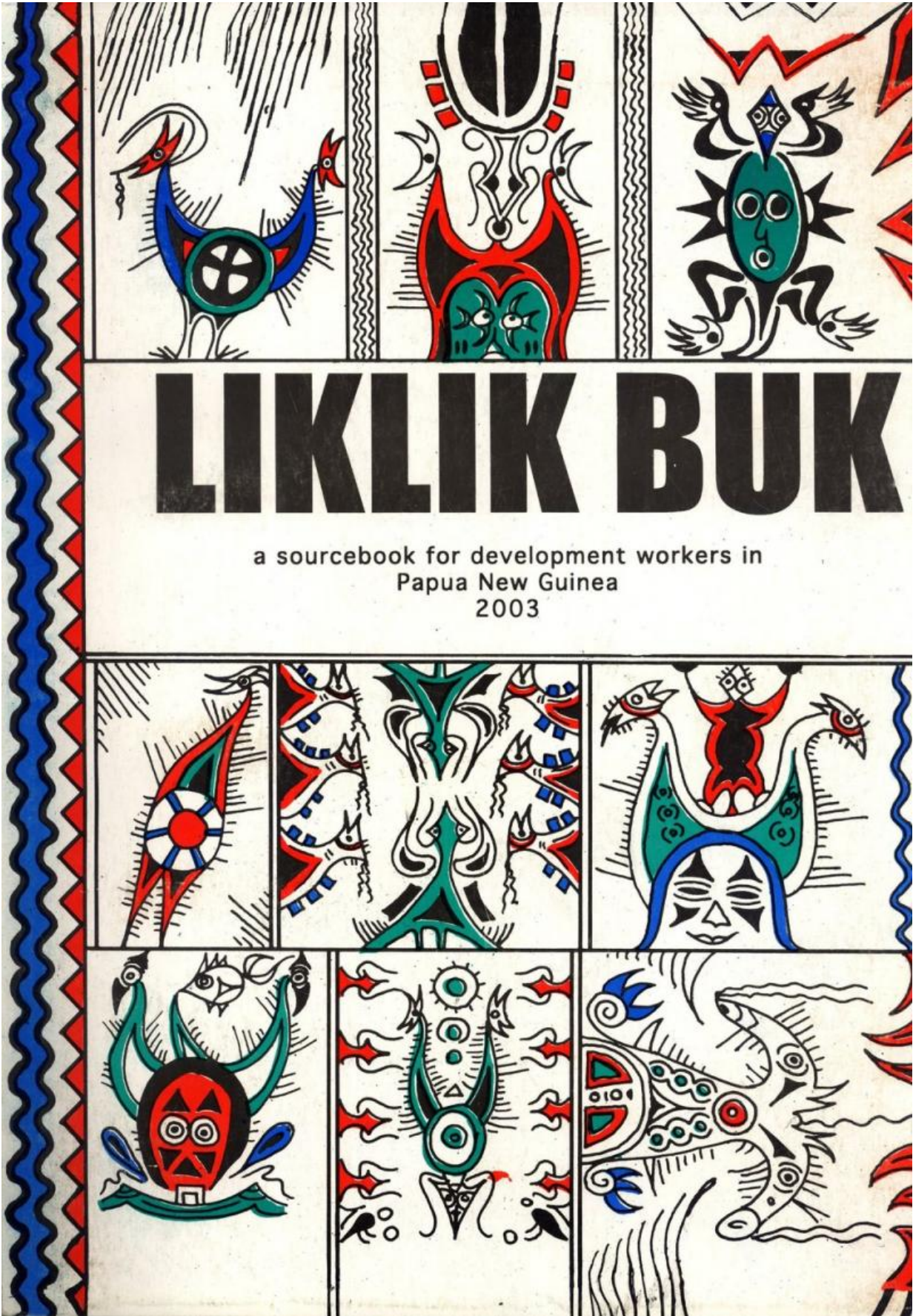
The Liklik Buk espoused the value of appropriate technology when working in the Solomon Islands. Credit: Liklik Buk Information Centre, Author provided

Appropriate technology lost and found

However, the concept of "appropriate technology" has waned since the 1970s. According to Paul Polak, who runs a company that works with people earning less than US$2 a day:

The appropriate technology movement died peacefully in its sleep ten years ago. Launched in 1973 by Fritz Schumacher […] it inspired politicians as different as Pat Brown in California and Jawarhal Nehru in India, thousands of middle-aged dreamers like me and millions of people from all walks of life around the world. […] The appropriate technology movement died because it was led by well-intentioned tinkerers instead of hard-nosed entrepreneurs designing for the market.

Instead, the traditional aid model has reigned. Sometimes it works well. In The End of Poverty Jeffrey Sachs suggests that poverty could end in 2025.

Sachs' solutions to bring about the end of poverty were what could have been considered appropriate technologies and appropriate techniques: fertilisers, water harvesting, sanitation, small-scale irrigation, improved seeds, antimalarial beds, etc.

However, other literature has painted a different picture, where aid and Western intervention utterly fails to address global poverty.

One criticism of aid is that there is little incentive for it to succeed because there is little effective feedback, evaluation or accountability with aid projects.

Furthermore, as aid agencies like tangible numerical results and glossy photographs, projects featuring prevention are rarely funded as there is no numerical outcome or images of success.

Some studies have shown that aid can actually make the situation worse. In her book [Dead Aid](link), economist Dambisa Moyo notes that aid is counterproductive. She quotes a World Bank study that found 85% of aid is misused. She argues that large aid inflows tend to reduce a government's accountability to its citizens.

Middle road

So there appears to be two opposing views: the bottom-up approach, in which one only responds to what people want, and the top-down approach, where you give [people](link) what you think they need.

But there is an intermediate approach, in which there are some things that should be given because they are basic human needs, while other things the recipients should be allowed to choose for themselves.

We employed such an approach for a project I was involved in in the Solomon Islands. Our contact in the Solomons regularly visits the communities. In Sydney, we established a committee, which consisted of a teacher with experience in the Solomons, a civil engineer, an economist and myself.

The communities involved with the project told us they needed clean water, toilets, a community hall and literacy classes. We investigated the groups [meeting](link) these [needs](link) in other developing countries.

The literacy program we designed appeared to work very well and involved participants from both sides of the civil war (1999-2003) in the Solomons working together.

Having a grandiose plan and pouring in aid money has not worked as well as many had hoped. Rather than being aid-based, projects should be part of a homegrown market-based development. In the case of the desperately poor, aid can be given until homegrown development reaches them.

It would seem that the old style appropriate technology project has essentially died, but a new kind of project with better market orientation, but still very much appropriate, has emerged from the ashes.

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