

**SUSTAINABLE LIVELIHOODS APPROACH AND COMMUNITY
DEVELOPMENT IN PRACTICE IN ENGINEERING
ORGANISATIONS**

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CERTIFICATE OF AUTHORSHIP/ORIGINALITY

I certify that the work in this thesis has not previously been submitted for a degree, nor has it been submitted as part of the requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

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July 2006

ABSTRACT

This thesis explored the limitations and challenges to a grassroots engineering non-government organisation for the use of the sustainable livelihoods approach in a community development scenario. The sustainable livelihoods approach is a relatively new approach developed to address the failure of previous approaches to community development. Its key focuses are holistic, people-centred, dynamic and sustainable development, working with people's strengths and establishing macro-micro links.

The role of engineering activities in community development is vital in the provision of technology and is visible across water, sanitation, energy, transport and telecommunications sectors. Again, however, community development activities in technology have not proven successful, thus the move towards the increasingly promoted approach of sustainable livelihoods.

The major proponents of the sustainable livelihoods approach have developed many case studies and guidelines to address the contrasts in practice between sustainable livelihoods and current practice, common across many sectors including health, education and agriculture, to name a few. Such research into the contrasts and likeness of engineering practice in particular in community development through the sustainable livelihoods approach has not been explored. This research aims to address this gap.

A case study of a Nepali engineering non-government organisation was used to explore these limitations and challenges to practice. Participatory methodologies were used to ensure that results and opportunities were identified from within the organisation itself. Data was collected through workshops, focus groups, interviews, surveys and overt observation. Cycles of systemic analyses were used to explore the problem situations for sustainable livelihoods practice as identified by the case study, and to develop systemically feasible and culturally desirable changes. Two approaches to these analyses, one based on logic, and the other based on culture, addressed the complexities characteristic of the community development and engineering sectors. Data was also collected from external stakeholders directly associated with the engineering activities of the case-study organisation to define the context for the research and verify that collected from the primary case-study organisation.

The key findings of the data collection phase were seven problem areas for the organisation in the case study: providing community infrastructure and improving

livelihoods; adopting a sustainable livelihoods approach; meeting the need for community participation; monitoring and evaluation; developing partnerships; learning about sustainable livelihoods; and addressing the role of community technology.

Conceptual models were developed for analysis of the key problem situations. Systemic analyses of the key stakeholders, limitations, and the political and social contexts and the conceptual models identified the disparities between the ideal practice and the reality of practice for each problem situation. Whilst the research aimed to explore practice specifically for engineering, the majority of the results from the case study focused on changes for the early establishment of an organisation in the field of sustainable livelihoods. Key challenges for the grassroots organisation in the case study included limitations to the learning capacity of the organisation, imbalances of power with higher level partners, and, importantly, issues of risk and survival. Real and practical changes to the practice of community development organisations based on the case study included using more participatory methodologies, addressing scheduling issues, developing bottom-up activities and more effective partnerships with donors. These were limitations general to non-sector-specific organisations.

The research subsequently explored the challenges specific to *engineering* organisations in adopting the sustainable livelihoods approach. These focused on ensuring that engineering in community development incorporates not only the natural and non-natural elements of intended community users but also the human elements. Five areas of practice were identified as being affected by the sustainable livelihoods approach, including the nature of technology, the processes for its development, the supporting role of national and international policies and standards, and the culture of engineering, specifically the role of engineering expertise and education. The opportunities in these areas of practice for sustainable livelihoods focused on ensuring a people-centred approach to engineering for community development.

The research had implications for the practices of a variety of engineering organisations in the community development sector, including NGOs, standards organisations, legislative and regulatory bodies and educators. Again, these implications focused on ensuring that engineering in community development directly reflected the priorities, skills and dynamics of the intended community users.

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ABBREVIATIONS

AYAD	Australian Youth Ambassadors for Development
CBO	Community-based Organisation
DDC	District Development Committee
DFID	Department for International Development
FAO	Food and Agriculture Organization
M&E	monitoring and evaluation
ENGO	engineering non-government organisation
GNP	Gross National Product
GO	Government organisation
HDI	Human Development Index
HMGN	His Majesty's Government of Nepal
IDS	Institute of Development Studies
IDS-Nepal	Integrated Development Society-Nepal
INGO	international non-government organisation
I/NGO	international and national non-government organisation
ISO	International Organisation for Standardization
ITDG	Intermediate Technology Development Group
LDC	least developed countries
LFP	Livelihoods and Forestry Programme
MDG	Millennium Development Goals
MoU	Memorandum of Understanding
MPPW	Ministry of Planning and Physical Works
NGO	non-government organisation
NR(s)	Nepali rupee(s)
ODI	Overseas Development Institute

O&M	operation and maintenance
PIP	policies, institutions and processes
PRSP	Poverty Reduction Strategy Paper
RBA	rights-based approaches
RWSSFDB	Rural Water Supply and Sanitation Fund Development Board
SL	sustainable livelihoods
SSM	soft systems methodology
SWAp	Sector-wide approach
UNDP	United Nations Development Programme
UTS	University of Technology, Sydney
VDC	Village Development Committee
WSS	water supply and sanitation