Participatory Approach: A Must for Sustainable Development Research

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Abstract—The focus of all developmental initiatives is the increase in the quality of life for all people. The engineering profession is very much dedicated to development by definition. Development initiatives, however technically sound, can be great failures at the implementation stage as witnessed recently in Sri Lanka (as in the Eppawela apatite and Noracholai power plant projects) and elsewhere (as in the drinking water projects in Bangladesh and the rural water supply project in Tibet). However, the involvement of community in such projects has ensured their sustainability. Nearly a hundred tools of research have evolved out of such experiences. Many donors therefore now recommend the use of participatory approaches in project planning, design, monitoring and evaluation and even reporting. As professionals closely integrated with development, engineers and scientists could greatly benefit from including participation in their projects. But for many professionals, often improperly trained in research methodology, the exercise may seem unnecessary, wasteful, and unscientific and the tools mind boggling. This paper therefore attempts to introduce the methodology of the participatory approach to the technical person faced with doing participatory research towards development. It is an overview of the approach based on experience and focuses on the practice of participatory approaches in projects and programmes.

Keywords: Research methodology, Sustainability

1 Introduction

The focus of all developmental initiatives is the increase in the quality of life for all people. The engineering profession is very much dedicated to development by definition. Nearly all definitions of engineering include aspects of the definition that it has to do with designing and manufacturing artifacts for solving problems in society and enhancing the quality of life with due care given to sustainability and eco-friendliness. Sri Lanka has its own record of engineering feats to boast of from the Adam’s bridge and the ancient irrigation schemes to the massive Mahaweli Diversion Scheme.

But we also have had our own share of non-sustainable projects.

2 Case studies

2.1 The Apatite Episode

In this section, that is section 2 on Case Studies, we will detail case studies that demonstrate why it is so important to include the community — that is community participation — in any project that we undertake. From these cases examined, we will try to define people’s participation for lack of which the projects were faulted.

Take for instance the recent Apatite episode. In the Anuradhapura district there occur peculiar weathered rocks once thought to be a form of the mineral laterite. In 1971, it was found that the mineral was indeed an igneous carbamate apatite, a valuable mineral containing phosphate and not laterite. The ministry of Industries and Scientific Affairs ordered 400 tons of it. It was treated with all due respect and used like gold for analysis by researchers and selected laboratories. In 1992, proposals were called for the use of the find. The Cabinet of Ministers decided to negotiate with “one of the leading fertilizer firms in the world,” namely Freeport MacMoran Resource Partners of USA. The final drafts of the Mineral Investment Agreement and subsidiary documents were agreed upon and initialled by the Secretary, Ministry of Industrial Development and the representatives of the Freeport Macmoran and IMCO Agrico in 1997 [1]. But the following year there was public protest against the project as in the view of many of the professional associations in the country (including the Institution of Engineers and the Institute of Chemistry, Ceylon) it was highly disadvantageous to the country.
A fundamental rights petition by residents of the district including a Buddhist priest was put forward objecting to the “Denial of the right of the public to object to the proposed agreement”. Relief was granted. In the ruling against the implementation of this project the Supreme Court held that “Human beings are at the centre of concerns for sustainable development” and that “Money is a number. Real wealth is food, fertile land, buildings or other things that sustain us…”. A similar fiasco can be quoted in the Ceylon Electricity Board’s attempt to build a coal powered power plant in Noracholal articulated by a Roman Catholic Priest. The details have been in the press in recent times and no elaboration is required.

2.2 The Bangladesh Drinking Water Fiasco

In Bangladesh health workers raised concerns about the quality of the drinking water available. Soon Bangladesh surface water sources were found to be contaminated with arsenic (a cumulative poison). Millions of tube-wells were therefore dug hastily in an attempt to obtain safe drinking water. Most of them were subsequently found to contain arsenic above the allowed limits. Bangladesh today is facing an arsenic catastrophe. More than half its population is exposed to the risk of gastrointestinal disorders through the accumulation of arsenic in the body. The government has now turned to the community to identify sources of safe drinking water. Today there is “close community involvement at all stages of implementation of the drinking water project” [2]. It is now admitted that “the key to the success of the project has been the combination of close integration with community at all stages and appropriate technical solutions”. Preference is now given to “community-based options” which are reckoned to be “sustainable safe water options”.

The rural water supply scheme in Tibet started in 1991 is another such example of the failure of governments’ technical solutions in sustainability and a community based approach to find sustainable solutions to the water and sanitation problems eight years later [3].

2.3 Chinese Settlements in Tibet

Still another example with serious lessons to engineers is the Chinese government’s project to resettle Chinese from overcrowded China in Tibet which needs people [4]. It is a project with serious political implications and lessons in financing. Though from a technical standpoint, it makes absolute sense to move people from an overpopulated region to an under-populated area, the project demonstrates that projects cannot be implemented with technical considerations alone. Among the gamut of other issues that need to be addressed, some are violations of rights, environmental impact and social impact. The Tibetan experience shows the new training that is required of science and engineering personnel that goes far beyond the technical.

The World Bank which funded the project, in response to public outcries over some projects it had funded, now has a Social Impact Assessment mechanism [5] that all projects are subjected to. When political protests mounted against the World Bank funded project to transfer a large Chinese population into Tibet, the Social Impact Assessment mechanism was invoked. Despite strong objections from the President of the Bank and the Chinese government, the project was faulted for not doing a participatory consultation with the people affected by the project and funding was cancelled. Today the Chinese government, having already invested millions in the aborted project, is attempting to raise funds from other sources.

Many such scenarios can be cited from all over the world. In an increasingly technological age they are shocking. Better research is therefore called for prior to designing projects. Thus development research now almost always involves a needs assessment and often feasibility studies.

2.4 Inadequate Token Needs Assessment

However, much in resources as in the above examples are still wasted on badly designed or inadequately targeted needs assessment. One of the reasons for it is that development initiatives are often not people focused or when involving people, they are not participatory but tokenistic (on the Hart’s Ladder, 3). Large scale surveys on normative needs (culturally/socially accepted needs seen as necessary for a so-called decent life) are carried out often using questionnaires designed solely by the researchers as the only tools. These preempt answers to a high degree. No new insight is obtained. The felt needs of the people are not assessed in any part of the process. The project then does not fit into the community’s life. The failure of the two case studies cited above from Sri Lanka could be greatly attributed to the lack of participation of the community in the project.
2.5 Participation

"Participation is a process through which stakeholders influence and share control over developmental initiatives, decisions and resources which affect them" as defined by the World Bank [6].

The participation of the people in any developmental process affecting them is their fundamental right. This is guaranteed by Article 146 of the Rio Declaration on Environment and Development [7] which states that

"All countries should also promote public participation, including through measures that provide access to information regarding legislation, regulations, activities, policies and programmes. They should also foster full public participation in sustainable development policy formulation and implementation. Women should be able to participate fully and equally in policy formulation and decision-making."

It is noted that Sri Lanka was signatory to The Rio Declaration and more importantly, the Supreme Court in using the Declaration in the Eapawala judgement [1] makes it, a fortiori, binding on us.

Children too, to the capacity they are able to participate, are rightful enjoyers of this right as guaranteed by Article 12 of the Convention on the Rights of the Child [8]. This is the most widely accepted convention because all countries have ratified it except Somalia (which had no government to do it) and the United States of America. Thus the involvement of all people affected by a developmental initiative must include their participation as a legal requirement unless this necessity can be ruled out using sound justification.

3 Issues in Application

The Sri Lankan government’s new economic strategy “Regaining Sri Lanka” therefore recognizes the need for participation at least in environmental issues. Many donors too now require the involvement of the beneficiaries in all phases of a project. Therefore new models of sustainable projects include, in addition to technical and economic dimensions, the proportionate increase in the environmental and social/participatory dimensions (such as the Amoeba model by Bell and Morse, 1999 [9]). Further different organizations have different traditions and expectation in terms of participatory requirements. This therefore again requires appropriate training for professionals.

Persons with a technical background often tend to start a needs assessment or research with a quantitative survey. Take for example the installation of a plant with harmful waste such as the coal plant proposed for Noraiacholai. The usual approach is to do a needs assessment based on predetermined indicators of success obtained in another country. A cost-benefit analysis done solely for operation is used to decide on installing the plant. The type of plant chosen is based on the money available. The site is chosen by politicians or external experts who may have never visited the place. Construction has to be completed hastily before the government changes. Any waste is disposed of in the cheapest and easiest way for the management. However, the rights of the people, as for instance laid down in the African Charter (environmental rights) require that the project does not affect the quality of life for the people without their consent. Thus the people of Eppawela protested at the lack of a suitable waste management mechanism in the MacMoran and IMCO apatite project proposal. The quantity of production, the amount of waste etc. were known over the project period. Soil testing was done. However there was no community participation involved in the project and it failed because of that. A participatory approach would have, on perceiving the need for more energy and deciding on a plant, analysed the host-community’s life style, its behavioural patterns, and discussed its capacity to cope with the new issue and possible support it can offer to and get from the project. In doing that it would have educated and empowered the community especially the most vulnerable of its members. Based on the community study a people-friendly model of the plant or waste management system could have been designed or decided upon. Monitoring and evaluation of the project could have been planned with the community if possible beforehand.

While the quantitative part of a research project is often easier to design and interpret and straightforward to implement, very often it cannot identify all issues of concern. It cannot evaluate the strength of the community. It distances itself from the community. Scientific objectivity is the overriding factor in quantitative research. It is often done for accountability purposes and funding. Further research said to be participatory in the past can be classed as anthropological research. This approach involves observation by the researcher.
learning the life history and describing the researchers' experiences during the observation period. There has also been information sharing and consultation sometimes. In the participatory approach the researcher is part of the community and unobtrusive. He/she looks for experiences, his/hers as well as that of the beneficiaries. The participants make decisions regarding themselves and are empowered by needed knowledge when necessary. This step contributes to improved design and implementation. It is therefore important for technical persons to be aware of the social approach.

4 Participatory Approach

In this approach, the beneficiaries set the agenda for future work. Data collection is combined with a discussion process within the community where the intervention is being made. The participation requirement should be at all stages for example at needs assessment, project planning, project designing, implementation, evaluation or impact assessment. There are thus more than a hundred tools/methods developed for the purpose. For professionals trained in technology, these may seem unnecessary, wasteful, unscientific and in the least a headache. This section of this paper attempts to introduce the methodology of the participatory approach to the technical person faced with doing participatory research towards development.

There are many types of participatory approaches. Participatory Rural Appraisal (PRA), Participatory Learning Appraisal (PLA) etc., have become increasingly popular in international development work. The World Bank projects are encouraged to include PRA, SARAR (Self-esteem, Associative strength, Resourcefulness, Action planning, Responsibility) and BA (Beneficiary Analysis). The principles followed can be summarised as follows [3]:

1. Learning reversal – experts learn from people
2. Learning progressively and rapidly
3. Offsetting biases
4. Optimal ignorance – learning only as far as necessary
5. Triangulating – cross checking information within the different groups of the community
6. Ensuring/seeking diversity
7. Facilitating – not bossing
8. Learning from mistakes

9. Sharing of information, ideas and resources with stakeholders.
10. Using your own best judgement at all times.

Semi-quantitative results can be obtained from the process with the use of scales such as the Likert scale [10].

5 Practising Participation

The purpose of a participatory exercise could be clearly identified. It could be for example a needs assessment, project planning, project designing implementation, evaluation or impact assessment and often all these stages. For this the usual data collection procedure is combined with a process of participation and discussion within the community where the intervention is being made. Beneficiaries set the agenda for future work.

There are more than a hundred tools (procedures) which can be used individually or in combination with expertise to generate the needed answers to questions. More important however is the approach itself rather than the individual tool selected. For example Save the Children in Sri Lanka did a rehabilitation programme in the Anuradhapura district soon after the conflict. This involved water and sanitation issues. A situation analysis using available secondary data was done prior to meeting with the people, especially the disabled children. An analysis of the stakeholders' interests in and influence on (a force-field analysis) the project was performed from small preliminary exercises. A participation strategy was worked out, including the identification of appropriate forms of involvement for all stakeholders. In addition to semi-structured interviews and focus group discussions it used tools it has adapted for local use [11].

The training of facilitators should be experiential in that they need to learn by doing. They facilitate the local people's own analysis and carry their decisions to project planners or implementers. In SARAR, the local people's problems, opportunities and responsibilities are brought out and their planning for the future is facilitated. These methods are costly but pay off in the long run. When the facilitators are not trained the method can be a failure.

In allocating time for these exercises, some time should be allocated, usually a day or two, for the warming up of participants including the researcher. Often the researcher is accompanied by a facilitator
and a recorder so as not to interrupt the process of decision making by the stakeholders. Incentives such as refreshments should be considered depending on the time spent and difficulty in attending.

6 Ethical considerations

As humans are used as research subjects in the sense of all development projects devoted to improving the lives of people, in planning a participatory session many ethical issues should be looked into before starting a session even if the findings are not for dissemination. Interventions planned can service people in various risk categories physically or emotionally or in emergency. Such research has special considerations and consent requirements in many countries. An example is the Office for Protection from Research Risks (OPRR) in the United States of America. Often there is a requirement for reports to the OPRR there. However the consent of the participant to participate, to be quoted and in the case of medically related engineering studies to be subjected to experimentation etc. has to be obtained in the appropriate manner as required by the state and in the language understood. The session should be culturally sensitive and inclusive so as to incorporate the “voiceless” people in the community as well. Researchers must take special care in being accommodative and courteous. Participation is always voluntary and therefore the subject can withdraw at any time. Before consent is obtained the subject should be informed of the procedure and consequences. Any information obtained should be acknowledged duly. Any outcome of the research should be communicated to the participants after editing using standard disclosure risk analysis methods. Many projects involve participation even in monitoring and evaluation, report writing, impact assessments and analysis.

7 Conclusions

Many researchers think that participatory methods are time consuming and messy. However much valuable information and insight can be gathered in a day or two in a well conducted session. Further it is a two way process, that empowers the community which then contributes to future project planning or evaluation. The failure of the Bangladesh drinking project and the Chinese Tibetan Settlement Project and the other case studies cited, all without the involvement of people, attests to the need for PLA methods. As engineers are mainly service providers to society, being familiar with participatory research is a must for engineers. Many books on participatory tools are available. Some project reports discuss the strategy used. Participatory research democratizes society. It is a transforming experience both to the project personnel as well as to the community.

Sri Lanka's universities take in the cream of society, many of whom go on to research careers. Such research rarely is in a laboratory isolated from people and often touches on the lives of people as most engineering work does. As we have seen, any project, where it involves people as in development projects, requires the practice of participation. This requires new skills in the perspective of traditional Sri Lankan training. It requires people skills.

Indeed, in Ecuador when oil companies asked the government permission to drill in areas settled by indigenous peoples, the government asked the companies to negotiate directly with the peoples whose lands and habitat would be affected. This placed new demands on the skills and training of engineers as never before -- the ability to include those affected by the proposed oil-drilling and negotiate with them for profit and benefit sharing.

The curriculum as we know it that is fed to engineers and scientists in Sri Lanka, especially engineers, therefore has to be addressed to teach graduates not only participatory methods in research and their necessity and benefits, but also not to laugh at anything that smells of liberal studies and in the process be trained as half-baked scientists and engineers missing sight of the full picture that has to be taken into account in any credible project.

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**Acknowledgements**

I became first mindful of the flaws and voids in my training as a scientist with no liberal component to the curriculum to which I had been exposed, when I worked as an academic in the US. I have since then worked consistently to fill this gap and hence my interest in exposing students to this dimension in education.

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**Biographical Sketch**

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Dr. Hoole’s teaching interests include green chemical processes, food technology, environmental engineering and liberal studies for scientists and engineers. She has pioneered web-based teaching in Sri Lanka for distance education for which the Government nominated her for a Commonwealth Award for Innovation.

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