ACTION RESEARCH FOR TECHNOLOGY UPGRADATION IN RURAL AREAS –

A PROPOSAL FOR THE CONSIDERATION OF UNIVERSITY TEACHERS *(Nov 1988)

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1. This is a proposal for Action Research for the Consideration of teachers of the Andhra University. It is concerned with the application of scientific knowledge for improving the living conditions, welfare and quality of life of the rural population. The proposal is for the University to adopt a village or villages and adopt an integrated approach for technology transfer or up gradation in the various sectors of activity simultaneously, offering feasible and relevant technologies as packages to individual households and village communities. The major objective of the action research proposal is to bring about rapidly, upgradation of technologies employed by the rural households and rural communities in the production, consumption welfare and infrastructure as rapidly as possible.

2. Action research is commonly understood as applied research activity which is problem-oriented, problem-solving at the micro-level and in which the concerned individual families or social groups, the research worker and the development agencies working in public and private sectors are all jointly involved. It aims at integrating development action and development analysis, so that a healthy and purposeful interaction is established among all the concerned groups as mentioned above. The target groups with their own as provide their inputs into the action research process taken up by those who plan and execute or assist in executing development projects, and those who critically look at the methodology and data base for project appraisal and analyze the outcome of intervention. Action Research is thus concerned with the diagnostic aspect of a problem, the importance of non-technical socio-cultural dimensions of the problem and cost effectiveness of intervention for solution of the problem. Naturally in the Indian context, Action Research is focused on the problems faced by the poor and derived sections of the society, though not necessarily

   As Action Research is primarily concerned with the need-based problems of the people, particularly the poorer sections of the society, it also involves mobilising the target groups for action as well as intellectuals for study and analysis and for providing technical assistance to the people. It is hoped that the interaction between the target groups and intellectuals will bring about a situation in which that right steps are taken for identifying problems, laying down priorities, securing the help of macro-level support systems (technical, financial and administrative systems) and optimal use of physical and human resources.

- **Address to a group of University teachers at a meeting held in the University on 11th November,1988 the Vice-Chancellor in the Chair. It emphasizes inter-disciplinary approach in data collection and analysis, and in an important sense becomes significant learning process for the researchers and those who implement development programmes.**

3. Technology may be defined giving either a narrow connotations or a broad connotation. A narrow definition and processes which have arisen from the application of human understanding and knowledge of matter and which serve to enhance human capabilities. This means that technology is understood basically as knowledge. A wider definition of technology would include social and cultural conditions that permit the use of objects, techniques and processed. As A.K.Sen said "Technology is not only about equipment and its operational characteristics, it is also about the social arrangements that permit productive processes to be carried out". In any proposal for action research for technology upgradation, the broader view of technology is more relevant. As late Prof. Nayudamma once observed, "appropriate or alternative technology is at the heart of indigenous development process to increase the problem-solving capacity of man to mitigate man's misery; to remove or reduce poverty; to provide gainful employment; to meet his basic needs; to raise productivity; to improve the traditional tools and skills; to increases his social status and pride, and to live in harmony with his environment with a sense of values of human dignity". Technology upgradation thus involve vital changes in instruments and methods as well as social organization in different sectors of activity; and both at the family organization and the community levels.

4. From a practical point of view technologies may be classified as follows:

    1) Technologies employed in the production and investment sectors (agriculture, fishing, dairy, cottage and small industries, artisans and other services, construction of houses, etc.)
    2) Technologies employed in the consumption sector (preparation of foods for cooking fuel used, preservations of foods, storage of food grains and other food stocks, storage and use of water cooking methods, kitchen gardening, planting trees around the house, design of houses and materials for house construction. Design and materials for furniture and utensils making Etc.)
    3) Technologies employed in ensuring family welfare (family planning, health, care of pregnant mothers, postnatal care, children's education)
    4) Technologies employed in building community assets and promoting community activities (public health and sanitation, drainage, building schools and hospitals, cultural activities, etc.)

    There are new and alternative technologies available in all these sectors. They have to be carefully evaluated from the point of view of economic facility and cultural relevance before they are recommended for adoption.

5. The proposed action research for technology upgradation in rural areas will involve the following tasks:
    1) Assessing the possibilities for technology transfer upgradation in the different sectors as noted above.

2) Assessing the technology options and their feasibility taking into account the people's perceptions, their scheme of priorities and their resources.
3) Promoting adoption of the feasible and relevant technologies with the support of funding agencies and credit institutions.
4) Concurrent monitoring of the technology upgradation process; and
5) Evaluating the impact on the target groups and the society.

6. For the performance of such tasks and implementation of the projects, it is proposed that a few villages may be adopted by the University in the first instance. The choice of the villages may represent both categories of relatively developed and relatively back-ward villages.

The action part of the project will be carried out at two levels:

(1) The level of family (2) the level of the target group or the entire village community. At the family level attention will be focused on designing a package of technologies covering the production/investment , consumption and welfare sectors on the basis of the family's needs and priorities. At the level of the target group or the village community attention will be focussed on building community Fcilities or infracture needed. The research part of the project will be carried out both at the village level and the University level.

7. Past experience relating to the design and implementation of anti-poverty programmes are designed or oriented to individual beneficiaries and income generating schemes, mostly one individual beneficiary in a family and one income-generating scheme. The implementation of programmes is also dome by the bureaucracy which is not accountable to the target groups and which rarely is committed to the support of the poor. The approach is a narrow economic approach, very limited in scope and it ignores several important dimensions of the activity complex of the family. Little attention is paid to the interaction between the economic and socio-cultural factors, which influence the way the resources of the family (land, capital, skills and experience) are productively used, and to the potential for raising the productivity through appropriate measures of technology upgradation and intervention. If rural families can adopt a package of relevant technologies in the different sectors referred to above, it will be the most effective and surest way of raising the productivity of the physical and human resources available to the families, their level of living and the quality of their life. The productivity of the family resources including the institutional credit available to the family will be measured in terms of output or benefit per unit of labor effort, effort, land cultivated, capital outlay, consumption expenditure on food and other items, expenditure on housing, etc., and it can only rise through upgradation of technology. Examples of new and alternative technologies available are obviously the improved varieties of seed, fertilizer and agricultural Implements, fodder grasses and fuel wood tree species, irrigation methods especially in dry areas, bio-gas production, generation of wind energy, materials for house construction, smokeless chelas, methods of preparing and cooking food materials for raising the nutritional value and efficiency, measures for reducing the incidence of Illness and morbidity especially in the4 case of women

and children, first aid in medical treatment, etc. These new and alternative technologies, if they are particularly offered and adopted as a package by the rural families in their production and consumption activities, they will make an enormous contribution to the efficient use of their limited resources and improving their levels of living. In fact it cannot be gainsaid that this is a most effective way of raising the incomes and living standards of the rural people. There is an urgent need for the establishment of appropriate technology demonstration and promotion cells in as many villages as possible. Voluntary agencies can serve as excellent agencies for this purpose.

8. One of the major problems faced by workers in the field of rural development is the wide gap to be filled between the available new and alternative technologies and their actual use by the rural people. There are several reasons for the arability of rural people, especially the poorer sections, to make use of the new and alternative technologies. The most important of them are lack of awareness, inertia, excessive attachment to conventional modes of production and habits of work and living, high cost of technology in relation to family assets and incomes, inadequate access to institutional credit and lack of opportunities to acquire minimum skills to adopt new technologies.

9. There is a vital and important role for the University teachers in this matter.

   They can make a most useful contribution in three areas: (1) in studying and analyzing the constraints for low level of adoption of new and alternative technologies in the various sectors and suggesting measures to over-come the constraints; (2) in the matter of designing new and appropriate techniques and processed or in adapting the existing ones; and (3) in the management of technical change and transfer of technology. It will be necessary to adopt in inter-disciplinary and holistic approach to the problem in order to bring out the complexity of interacting variables of the techno-socio-economic system, and the weak and strong points of the linkages, and in order to establish a viable model for technology transfer or upgradation, the model also implying a model of decentralized decision making and participatory management. A project of this kind will also involve meaningful exposure of the University teachers to social reality at the ground level, and to real life situations in the application of scientific knowledge. The performance of the various tasks of the project will also provide a challenging opportunity for the scientists and scholars of the University to work with the people, the poor people particularly and demonstrate to them in a vey practical way that science and technology would improve their working and living conditions, increase the economic returns to their labour and investments, and enhance their pride and prestige.

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