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Systems of Institutional Decentralization and Technology Transfer for Rural Small-Scale Enterprises

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SYSTEMS OF INSTITUTIONAL DECENTRALISATION AND TECHNOLOGY TRANSFER FOR RURAL SMALL-SCALE ENTERPRISES*

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1. INTRODUCTION

Most developing countries have now institutionalised various policies and programs for assisting small-scale enterprises, especially at the National and Sub-national (State) levels. However, to the extent that the various arrangements do not have impact at the grass-roots, rural small-scale enterprises would continue to be greatly handicapped.

The results of a recent study of eighteen rural industry institutions in developing countries (Chuta, 1985) show the low degree of decentralisation of essential services for rural industries. The survey results show that none of the eighteen institutions has any outlet in villages. Only six institutions have decentralised their facilities to divisional or district levels. Twelve out of eighteen institutions operate at state, regional or provincial levels without further decentralisation to rural areas. Only three of our responding institutions use some form of village level organisations (rural cooperatives, youth brigades, village councils, etc.) to promote rural industry.

An important question to ask is how rural industry institutions can have an impact on rural enterprises without their being located in villages. The issue is even more crucial in the context of transfer and diffusion of relevant technologies to rural enterprises

in order to increase resource productivity.

In this paper, attempt will be made to outline forms of decentralisation in developing countries, various modes of technology transfer for small industry and related issues as they affect rural micro-enterprises and types, role and implications of involving ngo's in promotional effort. Some conclusion will be arrived at based on foregoing appraisal.

2. FORMS OF DECENTRALISATION

Five major forms of decentralisation process have been identified (Rondinelli, 1983). The first process namely, deconcentration involves shifting of work-loads within the central government hierarchy to field projects. The Integrated Rural Development Projects of most developing countries are a classic example of the deconcentration process. Recently Nigeria has also set up, at National, State and Local Government levels, Directorate of Foods, Roads and Rural Infrastructure to deconcentrate development by promoting cottage industries, public works projects, feeder roads construction, improvement of rural markets, etc. The delegation process attempts to transfer functions to semi-autonomous field units like the 1970 Small Farmers' Development Agency in Malaysia. Through Nigerian agencies such as the Agricultural Development Projects, responsibility for speedy implementation of certain agricultural projects have been achieved. Likewise the Small-scale Industry Credit Scheme was assigned responsibility for extension of small loans to rural small-scale industries. In India, State governments have delegated powers to the District Industries Centres thus constituting them as focal points for promoting rural micro enterprises. A third process of decentralisation

known as devolution attempts to transfer functions to government agencies at state, provincial, district or local government level. The 1980 District Development Councils in Sri Lanka constitutes an example. Fourthly non-government agencies have been used as avenue for decentralisation. Their role in the promotion of rural micro enterprises would be examined in further detail later.

Finally, village-level organisation, mainly two types also have the potential for promoting rural industry in developing countries (Brown, 1982). Both community-based organisations (such cooperatives, Chinese Brigades and Israeli Kibbutzim) and group-based associations (such as Indian Women Cooperatives, and Builders' Brigade in Botswana) have been effective in the promotion of rural industry in the respective countries. What appears crucial is to determine how village-level organisations fit into a country's development plan and how this relationship can be best utilised.

Most forms of decentralised institutional support take the nature of community development programs since such support facilities involve mobilising people to tackle social problems through the adoption of democratic processes. However, it needs mentioning that Community Development Programs had inherent weakness which ought to

be taken into consideration while decentralising institutional support for rural small-scale industries (Holdcroft, 1984, p.54). Politically, conflicts of interest leading to inequitable land-ownership and exploitation of the poor by the elite should be taken into consideration. Economically, imbalances between provision of social services and income generation on the one hand; and total neglect of the distressed rural poor to the benefit of urban rich must be faced and resolved.

3. TECHNOLOGY TRANSFER FOR RURAL SMALL-SCALE INDUSTRY

An important merit of decentralising institutional support for rural small-scale industrial as well as other community development projects is that it activates and facilitates effective transfer of technology to rural people (Holdcroft, op.cit, p.48). It will be important therefore to examine major systems of technology transfer in order to assess their suitability for rural micro-enterprises.

3.1. Modes of Transfer

At the national level, the Japanese have relied on methods of subcontracting between large and small enterprises to transfer technology (Saito, 1974, Watanabe, 1983) while the Korean's (Kim, 1974) transferred technology through the use of industrial estates focusing on those entrepreneurs which had good technical education, mostly engineers. The Swedish Approach of sister industry (El-Namaki, 1986) is based on a relationship whereby transfer agreement is reached between two small industries, one in developed and the other in developing country. In China (Sinha, 1984), the initiative to innovate and transfer technology is the monopoly of top government departments who pursued egalitarian goals down to the grassroot. In Tanzania, transfer is effected through the rural training centres, workshops where master-craftsmen

are utilized and Training-cum-production centres.

Educational institutions have also played prominent role in the transfer of technology to rural enterprises. Through its Industrial Development Division and Extension services, the Georgia Institute of Technology in the USA was able to aid thousands of small, unsophisticated, labour-intensive enterprises throughout the State of Georgia (Hammond, 1984). The Birla Institute of Technology in India transferred technology to young engineering students by incorporating technical and entrepreneurship development subjects into its educational curriculum. Industries which the BIT experimented with include material handling, precision foundry, metal processing, electronic and electrical activities (Car, 1981).

Finally, the Transnational companies have attempted to transfer technology to developing countries through machinery import, direct foreign investment, licencing and trademark agreements and turnkey projects (Lall, 1982).

3.2. Major Issues of Technology Transfer

One major controversial issue in most developing countries is whether technology (in terms of software) can be transferred from country to country, given different cultural backgrounds, skill availability, level of economic development, etc. In this context, Bhalla's argument (1974) that the open-nature of the economies of most developing countries make the transfer

of existing technology and its adaptation a better alternative to creating new ones is questionable. The problem is that adaptation is not taking place due to total lack of complementary software facilities or capability. Recently, El-Namaki (1986) has pointed out that there is strong bias towards equipment transfer at the expense of human skill transfer.

In my University in Nigeria, two Apple 2E Micro-computers were imported since December 1984. Until today, they have not been put into any operational use due to software problems. Vendors recommend the purchase of new models due to obsolescence of old models. Constant breakdown of photocopiers and duplicating machines without repair facilities and spare parts constitute further illusion of technology transfer. Repair-men available are not versatile between models and training centres are hardly available within Nigeria to train Nigerian staff on any brand of existing machines.

A major obstacle to the transfer of technology to micro-enterprise is the prohibitive costs of such technologies. A recent survey conducted in Yola by the author shows that very small grain milling equipment cost between six to ten thousand Naira (Ø1.5 to 2.5 thousand), a price range which most micro enterprises cannot afford. The Rural Agro-Industrial Development Centres in Nigeria have resorted to soliciting the aid

of commercial banks in providing necessary credit to enable micro-enterprises or groups of such enterprises to purchase newly fabricated items. Without such credits, technology transfer in whatever form is meaningless.

Third, which types of micro-enterprise constitute target group for any specific technology transfer? The Birla Model which emphasises the production of a new breed of techno-entrepreneurs (graduate engineers) is different from the Tanzanian Model which emphasises the use of master-craftsmen in confering vocational skills or trade. The pattern of technology transfer must take cognisance of the qualitative differences in micro-enterprises.

A fourth issue which is related to the foregoing is the major objective of promotional effort. Where the opportunity cost of each unit of public expenditure is in question, issues relating to growth and viability of certain kinds of micro-enterprises needing promotional attention must be considered. Where of course, short-term employment benefits of massive promotional drive are of primary concern, that has to be made clear. The generally low benefit/cost ratios of past ILO/UNDP rural industry and handicraft projects point to the need to reassess the objectives of certain employment generating projects (Kilby and Bangasser, 1978) and the technologies being transferred.

A fifth issue that needs to be addressed is whether

technology transfer in whatever form has led to development of any meaningful local indigenous capacity and self-reliance. Indeed, here lies the reason for providing decentralised institutional support for community-based enterprises. The results of a recent study of micro equipment users in Gongola State (Chuta, 1988) reveals that there is almost total dependence on foreign countries for technology supply. Local manufacture of spare parts and components is yet at an infant stage. Even minor repairs and modifications of imported technology is undertaken by foreign experts. No significant and effective learning of imported technology is really underway. This situation raises the question of the desirability of utilizing the channel of transnationals as mode of technology transfer, that is, from the point of view of recipient countries.

One cannot discuss issues of technology transfer without referring to issues related to technology development. Recently, El-Namaki (1986, pp.20-28) outlined five approaches to technological development, namely, individual, enterprise, institutional, training and program approaches. Associated problems include lack of individual initiative and ability to absorb technological training, lack of technical expertise, teaching tools, materials and equipment, and over-stretched institutional effort to cover multiple functions and wide scope of activities. Nevertheless,

it seems that the declining nature of resources made available for research and development in most developing countries has been a major factor adversely affecting the pace of technological development, even for micro enterprises.

For example, between 1981 and 1983, the Federal Government of Nigeria's expenditure (recurrent and capital) as a percentage of national output decreased from .4 to .35 percent. According to the OAU Lagos Plan of Action, each member State is expected to spend at least one percent of its annual GDP on Science and Technology activities by 1990. Fortunately, the 1988 Federal Budget of Nigeria shows that capital budgetary allocation to Science and Technology increased from .1 percent to .3 percent respectively in 1987 and 1988. Recurrent expenditure for the same periods were respectively .5 percent and .7 percent of total recurrent budget. Even though Nigeria just barely meets the overall one percent mark, the impact of the R & D expenditure on micro enterprises is yet to be seen. There is also the need to sustain the existing level of expenditure and increase budgetary allocation in the future. This is the challenge facing most developing countries.

4. THE ROLE OF NGOs

There are at least two kinds of non-governmental organisations, namely, the foreign NGOs (FNGOs) and Indigenous NGOs (INGOs). The FNGOs (such as missionaries) have the advantage of being endowed with adequate material and human resources to be able to operate without much hindrance. Being foreign, they are able to avoid entanglement with local "politics" and therefore can devote full attention to developmental issues.

On the other hand, the INGOs do not have much resource endowment. They are therefore incapable of subsidising operational activities that address the various problems of large numbers of heterogenous rural micro-enterprises, let alone breaking even or even operating at a profit. If the INGOs are to be involved in the promotion of micro-enterprises, they must charge affordable fees. Today in Nigeria, there are numerous indigenous management consulting firms which cater to the needs of medium-scale, relatively capital-intensive firms. However such luxurious services can hardly be available to rural, family-based micro enterprises for quite obvious reasons.

A major advantage of the INGOs over the FNGOs is that the latter makes for self-reliant institutional

development in the sense that the foreign organisation has a temporary lifespan. However, for INGOs to thrive, they must be provided with adequate resources to enable them attend to the needs of micro-enterprises at subsidised rates.

Indigenous NGOs will emerge to carry out the important developmental functions if funded by National governments or by development agencies such as the World Bank or USAID. The MIDAS (Micro Industries Development Assistance Society) in Bangladesh is an example of an INGO set up through the instrumentality of the USAID. The Canadian International Development Agency (CIDA) has traditionally funded local crafts through foreign NGO's. But it could do same through indigenous ones. However, such local NGOs might be seen in some countries as an extension of foreign imperialists who now become a local capitalist class. This situation might obstruct efforts aimed at providing essential services to rural micro-enterprises. It is also conceivable that such INGOs could become exploitative of the under-priviledged if their activities are not properly monitored. It is therefore not surprising that the Nigerian Government dismantled all the produce marketing boards due partly to the fact that their licensed buying agents often exploited poor farmers.

The problem of promoting micro-enterprises is a

monumental task. Only governments at National, State and local government levels can mobilise the resources to attend to the promotional needs of micro-enterprises at subsidised rates. The economic incentive is not there for local NGOs to assume the required responsibilities based on their private resources alone.

In general, NGOs could be useful in various aspects of promotional effort aimed at rural micro-enterprises. Following the outcome of a recent IDRC workshop in Singapore (1985) the NGOs can assist in various ways. First, they could improve and coordinate the activities of multiple activities of various institutions. NGO's could now constitute a focal point for receiving and channelling available resources. Second, NGO's would help to organise village-based groups such as cooperatives, youth clubs and provide leadership training so that village organisation could develop proper orientation for their various activities. They can help to implement specific kinds of community-based projects, for instance those required for establishing appropriate financial technology to mobilise rural savings. They Pygmy Deposits Scheme of the Indian Syndicate Bank (Brunton, 1986), the Grameen Bank Project in Bangladesh, the Philippine Self-Employment Programme (SELP) involving the social credit program/Trial Fund and Rural Money Shops (Belandres, 1987) are examples of activities where NGO's could play prominent role. These projects required organising rural

communities to provide appropriate facilities for accepting small deposits and servicing small loans. The Indian and Bangladesh projects respectively involved saving of one rupee and one taka per day per person. All that was required was identifying a trustworthy community leader, developing contractual arrangements which take cognisance of low level of rural incomes and importance of liquidity management. Third, NGO's with detailed guidelines and blueprints should be able to organise local blacksmiths to produce relevant tools for rural works, housing and road construction. It should not be difficult to construct local foundries for casting different forms of capital goods. Lack of appropriate foundry facilities in villages such as exists in rural areas of Indonesia is a major snag in the way of developing technological capacity in the rural areas. Fourth, NGOs can undertake public relations activities for rural micro-enterprises by organising craft exhibitions or sloting in publicity materials in the radio and television. It would be important that such publicity be undertaken in local languages. Finally, where the NGO's are involved in running educational institutions, they should include rural micro-enterprises in primary and secondary school curriculum so as to create the necessary producer and consumer consciousness.

5. CONCLUSION

The only form of institutional decentralisation which can have meaningful impact at the grassroots is that which establishes presence in the villages. Experience shows that this is hardly the case. Most Governments' efforts of decentralisation for rural industry take the form of deconcentration and delegation and institutional arrangements do not go beyond provincial/district headquarters. Often, developing countries' governments prefer directing promotional efforts at modern medium-scale capital-intensive projects at the expense of micro-enterprises. Unless this posture changes, goals of achieving distributional equity through the creation of rural small-scale, income earning and employment generation activities, cannot be realised.

The issue of technology transfer for rural micro-enterprises need to be examined more seriously and objectively. There is need to ascertain whose interest is paramount in the process. Any technology transfer which does not develop local indigenous technology capacity to produce both hardware and software, adapt, repair, and service these is of no use. Technology transfer must therefore incorporate systems of involving the micro-enterprises themselves in identifying needed technology and testing such technologies for

acceptability. Such systems must be rural-based to be of lasting significance.

With the high rate of unemployment among high school and university graduates, in most developing countries, the Tanzania's Open Apprenticeship system, Korea's Approach of Developing Techno-entrepreneurs and Birla's Approach lend themselves for emulation. This is more so if the issues of self-employment and entrepreneurship development have to be incorporated in school/university curriculum. It will be a welcome development for educational institutions to train graduates who become job creators rather than job seekers. Both governments and donors will have to consider channelling more resources into educational institutions specifically for the purpose of creating the potential for generating self-employment.

Whatever system of decentralisation is involved, the NGOs have important role to play. Such role include inter alia, originating ideas, coordinating multi-faceted activities at the grassroots, and implementing specific projects. Indigenous forms of NGO's would be preferred to foreign NGO's in order to leave behind a permanent institutional arrangement in the developing countries. Local NGOs would therefore need regular subvention to enable them provide services which micro-enterprises can possibly afford. Perhaps what is needed is a bold and courageous step to mobilise, train, reorientate local

middlemen, master craftsmen and money-lenders into functional local NGOs to deliver appropriate credit and technical services to micro enterprises.

Political economy issues must be clearly recognised in any decentralisation effort. Interest groups and class conflicts must be identified well in advance to ensure that rural micro-enterprises are not bypassed in any promotional effort. Activities must be monitored to ascertain whether services delivered generate the needed, output, income or employment. Rural Cooperative Societies with adequate leadership are perhaps the best channels for delivering essential services to micro-enterprises in a self-reliant way.

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