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Addendum

Report submitted by the International Fund for Agricultural Development*

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INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT

الصندوق الدولي للتنمية الزراعية

ENERGY NEEDS OF THE RURAL POOR

Paper submitted by the International Fund for Agricultural Development to the United Nations Conference on New and Renewable Sources of Energy

Nairobi, Kenya
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107, Via del Serafico, 00142 Roma, Italy — Cables IFAD ROME, Telex 614160/2 IFAD, Tel. 54591

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I. INTRODUCTION

The subjects being considered by this Conference are of momentous importance for the long-term future and well being of the human race. The Conference is important and timely and will enable the international community to take stock of technological progress in the field of new and renewable sources of energy and to address some key policy issues.

The effect of recent changes in the world's energy economy on the industrialized countries and the modern sectors of production have been highly dramatized, but the worsening energy situation in many developing countries, particularly the low-income countries, has received relatively little attention. By virtue of its mandate, which relates to the promotion of increased food production and the reduction of rural poverty in the developing countries, IFAD's concerns are focussed upon the actual or potential effects of energy-related changes on the livelihood and development prospects of small farmers and landless workers in rural areas.

The situation with respect to biomass fuels is of particular interest to IFAD. Fuelwood, charcoal and other traditional fuels such as dung, and agricultural residues are the almost exclusive fuel of around two billion people. In the least developed countries these biomass fuels are the predominant fuels in the total national energy consumption; in some countries they account for over 90 percent of the total consumption of energy of all kinds. Progress in the more efficient utilization and renewal of these resources is an essential pre-requisite of rural development, indeed of rural survival.

In addition to IFAD's concerns about the availability and efficient utilization of such biomass fuels, which will remain absolutely essential for subsistence purposes to the rural poor in the foreseeable future, the Fund also has a special interest in the maintenance and expansion of conventional fossil fuel supplies in developing countries, which is an indispensable pre-requisite, at least for some decades ahead, for rural development as a whole.

This paper, based on IFAD's own limited experience, outlines some of the considerations that seem to merit special attention in the foregoing context. In IFAD's view, the energy needs of the rural poor and policies relating to the production and distribution of energy for agricultural and rural development must be addressed within the context of an overall development framework. This task of developing energy sources in rural areas also inevitably involves the allocation of scarce land to different and potentially conflicting uses, such as food or fuel. Consistent with its basic mandate to assist its Member Countries in increasing food production and reducing rural poverty, the Fund is prepared to pay special attention to the energy needs of the rural poor.

II. ENERGY IN RURAL DEVELOPMENT

Within the rural sector, scarcity of energy supplies is affecting both subsistence level farmers and other farmers who need increasing quantities of conventional sources of energy for expanding agricultural production and related activities.

1. Subsistence Fuels

The rural poor, IFAD's target group for project financing, ususally procure their domestic fuel as a free good. Fuel gathering is generally the responsibility of women and children. When wood depletion is not accompanied by sufficient economic advance to enable a voluntary transition to commercial fuels to take place, the tendency is to move to other, often inferior, free-good substitutes. Dung, agricultural residues, leaves, twigs and tree roots come into use. Where markets for fuel develop and people have no alternative but to purchase fuel, the expenditure constitutes a diversion of financial resources from other purchases.

Although subsistence fuels cannot, by definition, be considered in purely monetary terms, they are an essential part of the totality of rural poverty. It is essential that they are dealt with comprehensively and effectively. Some of the greatest problems being faced by the rural poor are in the realm of free-good fuels. These are depleting with alarming rapidity in many areas of the world with serious ecological consequences. Increasing time is being spent in fuel collection.

It is important and urgent to adopt adequate measures to expand the production of biofuels for the energy needs of the rural poor. Tree planting will play an essential role in future wood supply in many parts of the world and this should be encouraged on marginal and community land, accompanied by individual and communal incentives and guarantees. At the same time, regulatory measures should be adopted to preserve the ecological balance now threatened by indiscriminate deforestation.

In its activities in strengthening the role of local institutions and farmer organizations, IFAD would expect to play an increasing role in orienting such mechanisms to wood fuel replenishment. It is to the advantage of IFAD and other rural development organizations that the rural poor are aware of an existing energy problem and will respond, particularly in the area of reafforestation. This is not a case of imposing development upon disinterested onlookers.

Measures to assure proper allocation of energy resources might include regulation of demand through the use of improved stoves and more efficient methods of charcoal production in order to alleviate the rapidity with which depletion of subsistence fuels occurs. Experience has shown that improvements in energy efficiency of 50 percent are obtainable with improved designs. Tested prototypes of some simple new technologies such as efficient wood-burning ovens do exist and with careful testing to ensure their adaptability to traditional working habits, should be extensively promoted in rural areas.

In dealing with the energy needs of the rural poor, the fundamental fact should be clearly recognized that the energy problem in the poorest sectors of the rural economy is frequently merely a symptom of poverty; the root causes are usually social and economic. The absence of monetary income, infrastructure, technical skills, organizational structure and access to markets is preventing the rural poor from effectively utilizing even the energy resources already available. Low levels of energy use are associated with the self-reinforcing poverty in which people find themselves. This is a condition which, by its nature, is not likely to be alleviated solely by creating further technical opportunities for energy supply. It is for this reason that IFAD views energy as an integral element in any focussed attack on under-development in rural areas.

2. The Role of Conventional Fuels

Economic expansion in the rural sector has generally relied upon increased use of petroleum products and to some extent electricity. As productivity, incomes and demand rise, a transition is made from traditional fuels to commercial substitutes, such as charcoal, oil-based fuels for lighting, thermal or mechanical use, and eventually electricity.

In the case of oil-based energy, proper, timely and adequate supply of fuel to rural areas is essential for successful agricultural development. Energy permits the provision of agricultural inputs, the clearing of land, the transport of production to urban markets. Where commercial fuel use has established itself, sudden cut-offs in supply would be disasterous to the process of rural growth. Security of supply of such energy should therefore be a matter of immediate national concern and would require a fair allocation of energy resources between urban and rural areas.

In the longer-run, a gradual shift must be made in patterns of energy consumption. Large-scale hydropower contributes only 6 percent of the world's total commercial energy. Much of the world's potential hydro power remains to be tapped. Large quantities of energy will also be obtained from the oil-shales, tar sands and geothermal resources of the world. The potential of wind-power, solar power, and ocean thermal energy conversion is also being revealed. Undoubtedly, the future will see the emergence of small-scale electricity on the basis of future development of solar photovoltaics.

Planning should begin now for re-shaping the future demand for energy. Such thinking should be as innovative as possible, and should encourage the elaboration of new approaches to development. In addition, research in the areas of renewable resources and new technologies should be accelerated. But new technologies should be accepted for adoption only after these have been rigorously tested for their suitability to a variety of cultural and climatic conditions.

Extreme caution is needed in projecting future energy possibilities and options. The established patterns of successful development have been based upon the introduction of conventional fuels into key functions in which productivity is increased and linkages into other self-sustaining income and employment-generating activities such as agro industries are established. Here energy is not just a productive factor, but also has a vital catalytic function.

While some changes in the future pattern of energy consumption would seem unavoidable, the role of conventional fuels will not diminish in importance. At least for the time being, neither the experience, technical knowledge, nor sufficiently established technologies exist to provide an immediate basis for radical departures from present methods of securing significant economic progress. In the longer term a major global transition from the present dependence upon fossil fuels will be unavoidable. But the evolution of a new pattern of fuel consumption will take a long time. In the meanwhile, while the developed countries have to adopt urgent measures to reduce their demand for fossil fuels, the developing countries have no option but to allow for increments necessary to support their development objectives.

The subsistence and the emerging sectors of the rural economy thus require and compete for scarce supplies of both traditional and conventional forms of energy. The satisfaction of the energy requirements of the family and of those activities which support agriculture (transport, fertilization, draught power, small scale off-farm food processing) can be fully secured only within the framework of a national energy strategy. Such a strategy must be devised for both the short and the long-term, so as to assure that the rural sector has adequate access over time to both renewable and non-renewable sources of energy.

3. Need for National Energy Policies

The main task for the immediate future as recommended by the Ad Hoc Expert Group on Rural Energy (A/Conf. 100/PC/38) is to ask "the national governments, the UN system and other regional and international agencies, to commit themselves to strengthen the position of rural people in their access to sufficient supplies of energy, given the current circumstances of increased competition for scarce supplies of useful energy". This in turn will require concerted action, within carefully planned strategies, to increase the supply of fuels and to improve efficiency in their use, while ensuring that the rural sector has adequate access to both renewable and non-renewable sources of energy.

In the evolution of these national policies and programmes, four main aspects deserve particular attention:

First, rural energy strategies should be carefully evolved within the overall national energy policies and at the same time integrated with the overall institutional framework for rural development. It is essential that energy is seen in context and in its totality. The economies of the developing countries are under a series of different but mutually reinforcing energy pressures. Growth in the industrial sector requires growth in conventional fuel consumption. Agricultural development is required to raise living standards, feed growing populations, and augment export earnings. This requires increasing quantities of energy for mechanization, processing and transport. In the poorest areas the depletion of free-good fuel sources is creating a need for effective replenishment policies, but also for conventional fuel substitutes. The needs of each sector for energy add directly, and indirectly to each of the others and create competition between them for the fuel sources they share.

Secondly, in every case of energy requirement in the rural areas, the task is to define the need as precisely as possible and link it with the most effective and least costly available energy source. The danger of limiting that choice on grounds other than economic, social and technical efficacy must be guarded against. Concentration on new and renewable technologies must not be allowed to exclude the role of conventional energy sources from consideration.

Thirdly, it is of paramount importance to ensure that the development of new technologies and their application for rural needs is compatible with the process of rural development. This refers not only to the scale and capital intensity of these technologies but to the mechanism and institutions through which these technologies can be adapted and effectively brought into use. The choice of future energy sources must not be allowed to create new groupings of technologies or cut across previous groupings in ways which are detrimental to rural development.

Finally, it is highly important to provide for up-to-date exchanges of information on new technologies, including a realistic assessment of the results of initiatives with new and renewable energy sources which have already taken place.

III. CONCLUSION

The world will ultimately need to make a major transition away from its present extensive dependence upon fossil fuels. But the emergence of such a new pattern of fuel consumption will take a long time. In the meanwhile, the pressing needs of the developing countries over the short and medium term cannot be left unattended.

As indicated earlier, the developing countries will have a continuing need for conventional fuels, particularly petroleum products, in the foreseeable future to realize their development objectives, including their agricultural and rural development goals. Indeed, their need for such fuels will inevitably increase substantially in the coming years. It is vital, therefore, to assure that developing countries are in a position to meet such requirements. Within this broader context it will also be essential to pay due attention to the needs and problems of the rural poor, who are especially vulnerable to the effects of energy scarcity.

The Ad Hoc Expert Group on Rural Energy has recommended strengthening "the position of rural people in their access to sufficient supplies of energy, given the current circumstances of increased competition for scarce supplies of useful energy". To do this, it will be necessary to increase fuel supplies -- both renewable and non-renewable -- and improve the efficiency with which they are used. Clearly, this will require careful planning and concerted action.

The Ad Hoc Group on Financing of New and Renewable Energy has presented some tentative estimates of additional financial resources needed to meet requirements of commercial energy in non-oil producing developing countries for the period 1981-1990, prepared by different agencies like the World Bank, UNCTAD and UNIDO. These estimates are tentative but there is no doubt that opportunities for larger-scale investment in new and renewable sources of energy will begin to expand during the course of this decade, as new and viable technologies for the exploitation of these resources emerge. In the meanwhile, it is important to enhance the capacity of various financial institutions to support the development and application of new and renewable energy technologies in the developing countries. IFAD, for its part, stands ready to pay special attention to the energy needs of the rural poor within its basic mandate to increase food production and reduce rural poverty.

Within the context of each country's overall development policies it will be necessary to develop an appropriate strategy for meeting rural energy needs, taking the general institutional framework for rural development fully into account. Such strategies will need to strike an appropriate balance between requirements for conventional fuels for

industrial growth; for mechanization, processing and transport of agricultural goods; and in substitution for depleted "free-good" subsistence fuels. Rural energy requirements will need to be carefully matched to the most effective and least costly available energy source, and it must be assured that the development of new technologies and their application in the rural areas will be fully compatible with the rural development process.

For its part, IFAD has taken certain steps to assure that energy considerations bearing upon the realization of its objectives are properly taken into account. Specifically, IFAD is developing specific guidelines for the use of its staff and consultants to enable them to pay systematic attention to various aspects of rural energy. This will include, where appropriate, a general assessment of the supply position of recipient countries for both traditional and commercial energy with a specific focus on IFAD's target group; an assessment of the direct and indirect energy impact of the planned activities; and the identification of energy sub-components in projects. Consideration will also be given to the commissioning of special energy studies and impact analyses where these appear warranted by local conditions and offer a prospect of yielding information of operational or programmatic value. Attention will also be paid to the cost and security of fuel supplies.

In addition, the possibilities of promoting small-scale locally available technologies will also be explored. Mini-hydro, hydraulic rams, hand-pumps, plastic sheeting, green-houses, and simple solar crop driers and such technologies will be encouraged where there is a local capability and demonstrated need for their application.

IFAD also plans to widen its involvement in supporting fully integrated and well organized tree-planting activities where this is clearly promising and appropriate.

Finally, through the monitoring of its own projects and its interaction with other agencies, IFAD will be expanding its competence and experience in the energy field as a whole with the primary objective of refining the means for identifying the energy problems of its target group so that available and proven solutions can be most effectively applied to them.