THE CASE FOR THE MULTI-PURPOSE CHICO 4 PROJECT

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I agree with Bishop Claver that the problem continues to be poverty and inequitable distribution of income . . . I submit that there is poverty and serious inequitability of income in Kalinga . . . I submit further that the Chico 4 project will help solve these problems, although their enduring solution will in the final analysis depend on the Kalingas themselves.

The Chico 4 project is designed to generate 845 million kilowatt hours of electricity a year, on the average, and to irrigate 49,000 hectares of farm land.

The case for the Chico 4 project could, therefore, be presented in the following propositions:

1. The Chico 4 project will increase food production and there is no gainsaying its importance in our country, with its population growth; and our region, with its rice prospects.
2. The Chico 4 project will transform the energy of the Chico River into electric energy, and the benefits generated by the project will grow larger as the supply of imported oil becomes more expensive and increasingly uncertain.
3. The Chico 4 project will contribute to the economics of extending the Luzon Grid to the Cagayan Valley, and the resulting supply of cheaper electricity available 24 hours a day that is so essential to industry, trade, health and education.
4. The Chico 4 project will provide the means of arresting the decline in the culture of the tribes that will be affected by the project and, more generally, for uplifting the living standards of the Kalingas.

RICE PRODUCTION

In a meeting of the FAO Committee on Commodity Problems on Rice, held in Manila on March 20-22, 1979, it was submitted that:

> Rice is the staple for about half of the world's population; it alone accounts for 20 percent of global dietary energy supply and for nearly 40 percent in Asia. For hundred of millions of people in Asia, the crop forms virtually the sole livelihood.
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> The major characteristic of the world rice economy over the past two decades has been the relatively slow growth of production in the

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developing countries. Total and per caput rice production in the developing countries rose at 2.7 and 0.4 percent respectively per year between 1962-64 and 1975-77. But with the rise in population, per caput rice output failed to improve and actually fell in many countries, especially in the Far East, where 90 percent of the world's rice is produced and consumed.

Despite the projected increases under both basic and supplementary projections, the per caput consumption of rice is expected to show only small rises in many developing countries. Even to reach the modest project levels of consumption, many developing countries will need to finance a larger volume of imports. For several countries, this course might not be feasible because of balance of payments constraints. This is especially so under the basic projections where short supplies and high prices are likely to curtail import requirements of developing countries to a considerable extent.[1]

With reference to the Far East countries, excluding the Asian centrally planned economies, FAO projected rice production to be 198-209 million tons in 1985, while consumption shall be 201-206 million tons, signifying a precarious balance. Worldwide, the same precarious balance is projected for 1985 with production at 435-437 million metric tons and demand at 438-451 million metric tons. The report further postulated that:

The projected global deficit of 3 million tons (paddy basis), under the basic projections or an 'excess' of 6 million tons under the supplementary projection is small, about one percent, in relation to world production, and is within the normal range of production fluctuations due to weather and other short-term factors. However, the projected differences between production and demand are large in relation to current level of world trade in rice, as well as the projected import requirements and export availabilities in 1985. As a result prices could differ quite widely as between the two projections.

In the Philippine context, a review of the population program showed that (a) the growth in population accelerated from 2 percent a year during the early part of the 20th century (1903-48) to over 3 percent a year in the fifties and sixties and then, declined to 2.8 percent in the period 1970-75; and (b) life expectancy doubled from 26.6 – 37.5 years in 1918 to 60.6 years in 1973.[2]

Given the physical limits on arable land, the existence of malnutrition,[3] and growth in population, food supply continues to be a growing concern. Since the required expansion in the volume of food supply could be derived only through an increase in land productivity, irrigation is a necessary condition for the solution of the problem.

According to the project study conducted by the National Irrigation Administration, the existing irrigated farm lands in the area to be serviced by the Chico River Project consists of 6,680 hectares during the rainy season and 4,365 hectares during the dry season – or an average of around 5,500 hectares.

Upon the completion of the project's irrigation phase, the irrigated area shall reach 49,000 hectares during the rainy season and 36,000 hectares during the dry season. As a result, the annual net value of production shall increase from ₱31 million to ₱192 million.

The area of rice land that will be affected by the Chico project has been estimated at around 300 hectares. Under the above parameters, the annual net value of rice output that will be lost is less than ₱2 million compared to the ₱161 million to be gained from the irrigation project.

ELECTRIFICATION PHASE

The electricity phase of the project is estimated to generate 845 million kilowatt hours (KWH) a year, on the average. In 1978, NPC generated 1.2 billion KWH of electricity in its Bataan Thermal Plants. For this purpose, 1.74 million barrels of imported oil was burned. On this basis, oil consumption of 1.2 million barrels a year would be required to replace the electricity output of the Chico 4 project.

Presently, the OPEC base price for oil is US$14.54 per barrel; it was US$2.15 per barrel prior to the Yum Kimpur War in October 1973. At the prevailing price, the project shall save US$17.5 million a year in foreign exchange, or $525 million during the 30-year period of the hydro power plant.

The dollar and cents aspect of the project is impressive enough. More importantly, however, only one-third of the households in the country was served with electricity in 1977. Moreover, 82 percent of the electricity produced in 1977 was generated by burning 17.1 million barrels of imported oil.

Considering the experience during the oil crisis in 1973-74 when the price of oil was quadrupled by administrative action of the OPEC countries; considering the current experience when the price of oil was increased administratively by more than 20 percent; and considering the trauma of supply line disrupted by the revolution in Iran, the country's energy needs are highly vulnerable to the volatile historic forces at work in the Middle East.

REGIONAL CONSIDERATION

At the regional level, the National Power Corporation is about to start construction of transmission lines and transformation facilities from Ambuklao, Mountain Province to Tuguegarao, Cagayan. Around 375 kms of 230 KV and 69 KV lines shall be installed at an estimated project cost of ₱345 million.

In 1978, electricity consumption in Cagayan Valley amounted to 13.5 million KWH. At this level of consumption and on the basis of NPC power rate of ₱0.20 per KWH at the end of 1978, NPC would realize a sales revenue of ₱2.7 million a year. Based on the operating results in 1978, NPC would

earn an operating income of ₱1.1 million from this amount of sales in Cagayan Valley.

Out of this operating income, NPC has to pay interest charges on the financing of the project. At an interest rate of 8 percent per annum on the ₱345 million investment, interest expense shall be ₱27.6 million, or a multiple of the ₱1.1 million operating income that could be realized.

From a purely profit point of view, NPC should not bring electricity to Cagayan Valley, which had a population of 1.9 million in 1975. But NPC is wholly owned by the government and, as such, is an instrument of national economic and social policy. Thus, instead of waiting for the market in Cagayan Valley to grow to a size that would justify the investment in the transmission facilities, NPC constructs the line with the expectation that the electricity will accelerate the growth of Cagayan Valley and, over a few years, sell enough quantity to break even on the investment.

If we take Tuguegarao as an example, electricity was supplied in 1978 by a cooperative. The utility firm used diesel power plants to generate the electricity that it sold to the public. At the price obtaining then, the cost of the diesel oil that the firm used to generate the electricity was ₱.46 per KWH. On top of this, the firm had other costs such as interest charges, payroll, depreciation, etc. In comparison, NPC would have sold the same energy to the utility firm at ₱.20 per KWH. Not only would the price of electricity be lowered, but supply over a 24-hour period basis will be more assured.

What happened in the Bicol region after NPC had extended its transmission line by Christmas of 1977 may be used in discussing the benefits that electricity might give to Cagayan Valley. When Naga City was connected to the grid on June 1977, the price of electricity paid by residential consumers in Naga City was reduced from ₱0.83 (July 1977) per KWH to ₱0.45 (October 1978) per KWH. Among the important commodities purchased by consumers, only electricity registered a significant decrease in price during the last 5 years in the Bicol Region. Thus, the extension of the grid to the Bicol region made an immediate impact on the real income of the Bicolanos.

Secondary benefits could be even more meaningful. When I was working with the Ministry of Industry, a firm submitted an application to establish an abaca twine factory in Parañaque, Cavite. Considering that there was overcapacity in the abaca rope industry at that time and that industries are not allowed to be established within a 50-km. radius of Manila, we informed the private firm that its application to establish a factory in Parañaque cannot be favorably considered. We told the project proponent that if the factory will be established in a depressed area like the Bicol region, particularly in Sorsogon, then the Ministry will not only approve the project but will also provide tax incentives.

After two weeks, the project proponent came back to request that he be allowed to establish his factory near Legaspi City, instead of Sorsogon,

because there was no electric power available in the latter. This was in 1976 when the NPC grid had not been extended to the Bicol region. The factory has since been established, providing gainful employment and earning foreign exchange from the export of its products.

The situation that evolved in the Bicol region may be replicated in Cagayan Valley. After the grid had been extended to the Bicol region, NPC investment of ₱248 million in the 377 kms of transmission and 275 MVA transformation facilities shall become viable when the Tiwi Geothermal Power Plants are in full operation. The first commercial-scale power plant with a 55 MW capacity using geothermal steam from a dead volcano was inaugurated January 11, 1979. A second unit with a 55 MW capacity will be inaugurated by the middle of June; and two more units are scheduled to be completed by the end of 1980.

The Bicol region presently requires only a maximum of 35 MW of electricity. The power plants that are under construction will have a capacity of 220 MW. The remaining 185 MW, therefore, will be available for other areas of Luzon, including the Cagayan Valley.

THE KALINGA CONSIDERATION

At the community level, what can the project contribute to improve the life of the Kalingas, particularly those whose habitats will be adversely affected?

When President Marcos transferred the resettlement aspect of the Chico River multi-purpose project to NPC on July 7, 1978, we endeavored to learn how NPC could bring direct benefits to the adversely affected families. Conveniently, a paper entitled "To Know the Meaning of the Chico River" was read by Ms. Carol H.M. Brady de Raedt in a symposium in Baguio shortly thereafter. In addition to the thought provoking issues raised, the paper assisted immensely in our search for literature on the subject, e.g., the major works of Mr. Robert Lawless, particularly *Societal Ecology in Northern Luzon: Kalinga Agriculture, Organization, Population, and Change* (Papers in Anthropology, Volume 18, No 1) and the Montanosa Social Action Center Report (unpublished), circa 1977.

My experience had been mainly on applied economics at the macro-level and, starting August 1974, the micro-economics of manufacturing firms. The Chico project was my first involvement in the economics of essentially subsistence agriculture in a cluster of isolated or peripheral villages. It was, therefore, exciting to learn that ecosystems play an important role.

The following are the preliminary findings from our research work and I would like to submit them to our cultural anthropologists for critical evaluation:

1. The people living in the barrios and settlements that will be affected by the Chico River project are proud, courageous and intelligent.

2. Their lifeway evolved, until recently, from their isolated habitats, their almost total dependence on nature for their livelihood, and their extended kinship society within each settlement.
3. There are two primary values in their culture – their children and their land, in that order. These are still considered by the elders as God-given or "Kabunian" given.
4. Their lifeway has recently been exposed to three powerful forces: (a) population growth; (b) education, including those brought by missionaries; and (c) declining soil fertility and receding forest resources.
5. The interaction of these forces has given rise to a breakdown of some of their valued traditions. In one of the settlements, almost 50 percent of the population had reportedly migrated elsewhere, particularly in the mines, to find other means of livelihood. The children who have gone on to higher education (in Baguio and in Manila) do not generally go back to live in their communities after they finish their higher education. Lack of economic opportunities and the absence of amenities are indicated as the compelling reasons for those turning their backs on cherished traditions.
6. Over the years, there evolved a rich-poor situation in the different settlements where the degree of inequality is quite high. Lawless (op. cit., p. 33) indicated that the difference between the poorest and the richest in Pasil was as high as 1:500 in terms of meat consumption; and 1:100 in rice production. He proceeded to analyze the origins of the socioeconomic inequality (pp. 102-104).

If these preliminary findings are substantially correct, one arrives at the conclusion that the project can contribute to the successful adjustment of the Kalingans to the changes that are already occurring in their society. The best approach is to design the resettlement around agricultural activities since this would initially involve only a geographic change. The supply of the scarce resources – land and capital – would be a necessary condition for an improvement of their lives.

A review of the materials on the Chico 4 project indicated a continuous refrain about the need to formulate the resettlement program in consultation with the people. A consensus appears to have been reached that a program imposed from the outside would not be acceptable to the people in the affected areas.

We agreed that such a dialogue would be very useful in relieving the stress that has arisen due to an evident communication gap. I was appalled to learn about the bitterness that has been created when NPC is still in the stage of preparing the final feasibility study of the project; when the construction of the dam will take years to complete!

Accordingly, at our request, Bishop Brasseur agreed to receive us on September 1, 1976 to discuss the Chico project. Bishop Brasseur was kind enough to agree for the clergy "to contact the people's spokesman and to facilitate the dialogue depending on the people's acceptance of this proposal." The target for the initial meeting was set for the first week of November 1978.

In preparation for the dialogue, we prepared a draft resettlement program to serve as aid to the discussions:

1. Relocation shall be designed to bring progress to the people living along the rivers whose houses, farm lands, and/or other properties shall be adversely affected by the project.
2. The people to be relocated shall be represented and shall participate in the decision-making process for their resettlement; and
3. The resettlement program shall be implemented within the context of existing laws.

POLICY GUIDELINES

4. The properties that shall be affected, including those owned by families not residing along the river, shall be paid for at their fair values.
5. The families of relocatees shall be given monetary assistance for resettlement, in addition to the compensation for their properties.
6. The families of relocatees shall be given a choice from any of the following resettlement schemes:
   a) For those who are prepared to resettle in the lowlands, a field of rice land near Tabuk, which shall be irrigated upon the completion of the project, shall be given under liberal terms, such as those of the land reform law and regulations.
   b) For those who choose to settle in the highlands, a tract of public land that may be available shall be given under the Homestead Act; or alternatively.
   c) An area within the watershed shall be made available to the families on a leasehold basis and at a nominal rental rate; provided the relocatees shall not destroy the forest cover or the trees that shall be planted to protect the watershed.
   d) For those who shall choose to settle in other places, assistance shall be given in transporting their goods to the new site.
7. Whenever feasible, all families in each of the villages shall resettle in one site to help preserve their cultural traditions and cooperative social systems.

However, events overran our plans. On September 20, 1978, hostile elements raided the NPC survey camp, killing four of our people and wounding another four NPC personnel. In view of the consequent tense situation, we felt obliged to go to the people in the affected areas and offer them an interim resettlement program which would provide them with means to get out of their communities if they felt their lives were threatened. We told them, in a meeting held in Tabuk on October 2, 1978, that the proffered interim program will be adjusted to the final program to be developed in the proposed dialogue we were seeking with all the affected families. The interim program followed the draft outline and involved:

a) Two (2) hectares farm lot;
b) Ten thousand pesos (₱10,000) cash;
c) The privilege to cultivate their directly affected properties up to the time that the reservoir shall be filled to capacity;
d) Due compensation at a fair and reasonable price of affected agricultural real property;
e) NAPOCOR will assist materially and financially in transfering their properties from the affected areas to their chosen resettlement site.

Subsequently, Bishop Brasseur informed us that in view of the tense situation obtaining in the area, the plan to set up a dialogue with the leaders of the affected families during the first week of November had to be deferred.

On January 15, 1979, 20 heads of families from Tanglag signified their acceptance of the interim resettlement program. Out of these 20 families, 18 were verified to be eligible for resettlement by the government authorities. Thus, on February 15, 1979, these families received their deposit book for ₱10,000 with the Philippine National Bank branch in Tabuk, and the Deed of Conveyance for two hectares of rice land in the resettlment area.

It is interesting to note, in this connection, that the people signified their wish to attach a condition in the title of the farm land that they shall not sell, encumber or alienate the farm land for a period of 15 years except by way of hereditary succession. The people also insisted that the deposit shall be used exclusively to acquire farm requirements, construct a residential house and, in case of emergency, to answer for medical and hospitalization expenses. On March 22, 1979, titles of the two-hectare farm land were distributed to the awardees by Minister Enrile.

At the time that the deposit book and the Deed of Conveyance were being distributed to the resettlers on February 15, 1979, another group of family heads submitted their acceptance of the interim resettlement program. After verification by the authorities, 24 of these families were established to be eligible for resettlement. The deposit book and Deed of Conveyance on the two-hectare plot of land for each family will be awarded one week after.[5]

Thus, we have now 41 families from Tanglag who have accepted the interim resettlement program and, accordingly, received farm land. Some of

the awardees have withdrawn money from their deposit for their farm needs, such as purchase of a carabao to till the land. Significantly, all the resettlers were given the same two-hectares of land and ₱10,000 capital for their farming operation regardless of whether they own or do not own land in their previous habitats.

The land that has been awarded to the resettlers will be irrigated when the Chico River projects is completed. If we postulate that each hectare of land will produce 100 cavans of palay per harvest and that the number of harvests a year will be 2.5, the resettlers will harvest 500 cavans of rice a year out of the two hectares of land. If we further postulate that the price of palay will be in the order of ₱60.00 per cavan, then the farmers will realize a gross revenue of ₱30,000 a year.

The number of affected families have been estimated at around 750. Assuming that these families own all the 300 hectares of rice land that will be submerged, then these families own less than one-half hectare each on the average. In comparison the interim program provided them with two-hectares of rice land. In addition, payments for the land that will be submerged could be used by the families to acquire additional land at their option.

With the 41 resettled families, we shall be able to determine if the interim resettlement program shall improve their lifeway. We shall also be able to make adjustments, if found necessary, to ensure that the program shall succeed since the flood waters will not rise behind the dam until 1986. Initially, the resettlers will be allowed to adjust to the relocation on their own in keeping with their known proud heritage. However, NPC and other government agencies are prepared to assist them in the event such help is requested and needed.

In addition to the resettlement program, the construction of the project will provide jobs for the members of the affected families. This will not only provide them with an alternative or additional source of income during the initial years of resettlement but also the opportunity to acquire on the job training for higher construction skills. The latter could assume as great an importance to the affected families as the initial capital provided by the resettlement program for two reasons: (1) there will be members of these families who would normally not have an inclination towards farming; and (2) there will most probably be an increase in their population.

CONCLUSION

During the coming years, characterized by probable food shortages as well as an uncertain and increasingly costlier oil supply, the country cannot afford to forego the benefits that will be generated by the Chico multi-purpose project. These benefits will accrue to the country as a whole, to Cagayan Valley as a region, and particularly to the people residing along the banks of the Chico and Pasil Rivers.

NOTES

[1]FAO, *Projections of Supply and Demand for Rice to 1985,* (CCP: RI 78/8, December 1978).

[2]Final Report of the Special Committee to Review the Philippine Population Program (June, 1978).

[3]Dr. C. Florencio, "Rehabilitation of Malnourished Children: Case Reports on an Infant and Three Pre-schoolers" (University of the Philippines).

[4]The 75,000 kilowatt (KW) Ambuklao Project, completed in 1956, cost US$733 per KW of capacity while the 360,000 KW of the Chico 4 project is estimated to cost $1,080 per KW. The 150,000 KW Bataan thermal plants, completed in 1977, cost $173 per KW.

[5]Another group of 30 families had in April written their acceptance of the interim program.