

AGENDA FOR SUSTAINABLE DEVELOPMENT FOR THE NEXT ADMINISTRATION

by Sixto K. Roxas
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Criticisms of the program we advocate for a nationalist industrialization of the country centered on local communities have focused on its being nationalistic, anti-globalist, protectionist, etc.

The criticisms have unfortunately been tangential and not aimed at the principles and the facts that are the hard-core foundations of the thinking and the strategy behind the programs we are pursuing. I realize that unless these are clearly outlined, they make a fuzzy target.

I write this therefore, to outline the program and the thinking with abundant clarity so those who wish to attack the position will at least aim at the right targets. At the same time, I invite critics to outline as explicitly the alternative diagnosis and prescription they propose for the malady at the roots of our nation's deepening agony.

My position is all of one piece. It springs from 1) an explanation of the roots of national poverty, conflict and environmental destruction, 2) a strategy for a sustainable development to address those problems at the roots, 3) a design for the organizations suited to that strategy, that we must put on the ground and 4) a system for tracking and measuring performance that reflects the national interest more faithfully.

All these add up to a concept of sustainable development. This is defined as a development course that is not prone to interruption by forces of its own creation which push environmental destruction to intolerable limits, exhaust economic resources, exacerbate social inequalities to the point of revolution or disruptive political conflict.

On all counts, the country is not now on such a sustainable course. Our present development is not economically, ecologically, socially or politically sustainable. Contrary to common impression, it was not a case that we were on the right track, doing extremely well, when a series of disasters interrupted our "recovery". Not at all. We were on a non-sustainable path in the Marcos years, and the new governments from Cory Aquino to Gloria Macapagal Arroyo simply put the Philippines back on the same nonsustainable course in the name of "recovery".

The argument in effect says, our course is not sustainable if:

1. We keep implementing projects that cause massive marginalization of people and create poverty wholesale while we balance them with micro projects that alleviate poverty at retail.
2. Our mainstream projects cause massive migration to our endangered uplands and our already overcrowded urban centers, and indirectly force our people to pursue every menial and degrading tasks all over the world.
3. We exacerbate social and political conflicts by a strategy that aggravates gaps in income levels and lifestyles between social classes and geographic areas.
4. We pursue an investment strategy that shifts resources from programs capable of yielding social returns of 40% to 60% to projects yielding 5% to 10% while we raise foreign capital that costs us over 20% per year.

An Overview

Poverty is the overriding problem of the country. To understand its roots it is necessary to explain rural poverty which is also the incubator of impoverization.

The persistence of poverty may be attributed to either of two reasons:

1. Inadequate development - the mainstream development projects that both private sector business and government have undertaken all these years produce employment that reduce poverty. But there are not enough of them.
2. Inappropriate development: these mainstream projects themselves aggravate poverty by marginalizing whole segments of the population. The peripheral poverty-alleviating programs are unable to cope with the massive poverty-creating impact of the mainstream projects.

Conventional wisdom attributes to *inadequate* development the persistence of the problem. I blame *inappropriate* development.

To understand why, we must take a fresh look at the framework we use for diagnosing the problem. The conventional wisdom reasons as follows:

The Philippines is starting as a traditional rural agricultural society. Traditional

agriculture is based on small, subsistence family farms. Agriculture must be modernized, which means large-scale, mechanized, plantation agribusiness.

But even agribusiness will be unable to provide adequate living for the size of the Philippine population. The only answer is industrialization. But industrialization based on import substitution and focused on the domestic market is a dead end because the domestic market is small. Therefore we must concentrate on export-oriented industries. And since export markets are highly competitive, we must rely primarily on foreign investments to provide capital, management, technology and international access to markets.

Such a policy however may result in a badly skewed income distribution and a persistence of poverty. Therefore, government must balance the program with poverty-alleviating projects such as special rural employment programs and assistance to small and medium scale industry, micro-enterprises and the informal business sector.

Against this, the argument I advocate is as follows:

No country with the resource and population circumstances of the Philippines has achieved industrialization without first exploiting its agricultural resources and converting its majority rural population into an effective and dynamic domestic market.

For a country with 80 million people and only 10 million hectares of arable land, this is achieved only by a highly intensive and diversified mode of commercial agriculture, based on owner-operated small farms supported with post harvest processing, storage, drying, and modern transport systems.

Even the most recent studies of country competitive advantage, for example by Michael E. Porter¹ of the Harvard Business School, the size and demands

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1. Michael E. Porter of the Harvard Business School has made the study of competitive advantage his special field of study. He has brought out two books, *Competitive Strategy* in 1980 and *Competitive Advantage* in 1985. Recently he has applied his analytical technique to the *Competitive Advantage of Nations*.
2. The technique is summed up in his concept of the "National Diamond" with "Factor conditions" and "domestic demand" as two side corners and "Related and supporting industries" and "firm strategy, structure, and rivalry" bottom and top.

of the home market are considered one of the key determinants of the competitive edge in the international markets, of the firms and industries in Europe, Japan, Korea and Taiwan. These home markets do not become a factor in developing the competitive edge until agroindustrial development based on intensive and diversified agriculture have been developed to the point where the rural population has become a major domestic market.

Toyota in Japan, Tattung in Taiwan and Hyundai in South Korea did not become the aggressive export producers they are now, by being licensees or suppliers for the international markets of General Motors, Philips, Westinghouse, or Chrysler. They started by catering to a growing domestic, largely rural market, which, over the years, became increasingly demanding in their specifications and unique in requiring specifications based on small rural households and farms.

The strategy is based on an analytical framework, a strategic planning process that produces a set of investment criteria, an approach to organization and an accounting system that differ from those that govern present planning and decision making in the country.

Analysis of Poverty

Most of the poor are self- employed small-farmers, particularly in the uplands, artisanal fishermen, and the landless farm workers. The poverty of the countryside pushes migrants to the urban centers to become the urban poor.

To understand poverty in the Philippines, therefore, it is necessary to understand rural poverty. The World Bank's diagnosis traces the causes to three structural factors: unequal asset ownership, particularly land, population growth, and the lack of productivity growth. These are aggravated by macro-policies with an anti-poor bias such as price policies, credit allocation, fiscal policy and government intervention in productive activities. Distribution of land in the country is more skewed than incomes: more than half of the farms in 1980

3. The most significant - and to many - surprising factor will be conditions of home demand. There is a common impression here that the international competitive position is primarily determined by a firm's responsiveness to the major international markets, or that, in order to become a major international trading country, a country should simply establish export enclaves.

4. Porter's analysis of actual cases belies this impression. It was not by becoming a licensee of Philips or IBM that Japan's Matsushita or Toshiba became major world traders in electronics, or By being licensees of GM or Ford that Toyota became the major exporter of cars. It was by having a domestic market that demanded smaller electronic systems and vehicles with very demanding specifications.

occupied 16% of farm area, while less than 4% occupy over one fourth of the land. A very high proportion of land operators are tenants and not landowners.

Deeper insights are provided by a more systemic analysis of particular modes of land use in the country. This goes beyond the conventional sector-analysis by crop that reduces the measurement of efficiency simplistically to per hectare crop physical or value yields. A systems diagnosis brings out insights that the more superficial analysis fails to reveal. Thus:

Certain land use modes (LUMs) use scarce prime lands extensively rather than intensively – generating relatively lower gva and utilizing low labor-inputs per hectare. Relatively higher labor productivity is achieved with low gva per hectare by reducing labor units per hectare. This would be the case with plantation agriculture.

Other LUMs use scarce prime lands intensively both in terms of high per hectare gvas and high labor inputs per hectare. Labor productivity is maintained at a high level of gva per unit of land. This is the case in so-called unimodal, small-farm, intensive and diversified agriculture.

Certain LUMs generate high gvas per hectare but a high percentage of the gva accrues to households and corporations outside the zone. Community income generation per hectare is low. This would be the case with many modern agribusiness operations, pineapple, bananas, etc.

Rural poverty results from high population density with low income density. This can be due to any of several combinations of conditions:

A land use mode which generates low gva per hectare in the face of high population density, or

A land use mode which generates high gva per hectare but only a low percentage of the gva accrues to the local community, so the result is low community income density and high community population density. This in turn can be the result of the LUM generating high labor productivity by maintaining a low labor usage per hectare.

Marginalization results when a land use mode appropriates a high percentage of land for a high gva use but with a low labor usage per hectare resulting in a low percentage of gva accruing to the local community.

In addition therefore to the three factors cited by the World Bank this analysis

advances the possibility of a fourth: modes of intervention which result in marginalization of rural populations. This becomes more revealing when (a) the analysis is done for specific sub-national areas, say, ecological zones, and (b) account is taken of the demographic conditions of each of the zones, for example, population and labor force, growth rates in farm and off-farm livelihood and the segmentation of the rural labor force into age cohorts.

The zones are perhaps far more meaningful for the Philippines because of its geography. Land use strategy must be tailored to the peculiar specifications of each zone. Geographers point out that the Philippine geological structure more resembles Japan's. It is noteworthy that Japan's land use management over the centuries has precisely been honed to the variety and multiplicity of these ecological niches. Nature dictates the mode of management that is appropriate.

Analysis of labor force distribution between agriculture and nonagriculture within the zone, and the comparison of growth rates in off-farm versus farm livelihood gives the number of years it will take before a structural turning point is achieved, i.e. when there is a decline in the percent of the labor force in agriculture. Conversely the mathematics can derive at given starting points of labor force distribution between agriculture and nonagriculture, and the rate of growth in labor force, the required rate of growth in non-agricultural employment to achieve an absolute reduction in the share of agriculture. This is then related to the age-segmentation of the labor force, e.g. in generations, e.g. young, ages 15 to 30, middle-aged, >30 to 45 and older, >45 to 60. Generally, farmers and fishermen, say, in the age bracket 45 to 60 will remain in those occupations for the rest of their life cycle. If they are displaced by the mode of investment intervention, they will seek other farming and fishing grounds. They will not become industrial or commercial workers. It will be their children ages 15 to about 25 that will become industrial workers, and mainly the women if the industries are garments or electronics. The older workers are marginalized.

The implication for a country that has had no more land frontier for at least the last three decades, is that agricultural and industrial development must be brought to each of the ecological zones. It will not do simply to have a few major cities as "growth poles" so called.

Another implication is that certain land use modes within the ecological zone force an early displacement of population towards the marginal uplands

where agricultural practice (such as slash and burn) result in resource destruction. The poverty problem can be aggravated by these modes. It is possible therefore that inappropriate strategy can result in wholesale poverty-creation while other government programs are attempting retail poverty- alleviation.

Strategic Perspective: Poverty Eradication

The analysis suggests certain directions for accomplishing poverty eradication and the logic of certain mainstream programs such as land reform and administrative decentralization.

The problems cannot be addressed from the remote perspective of the Metropolitan capital. Strategies must be tailor-made for each ecological zone. The objective is to effect a land use plan which maximizes the use of the best lands in the zone to achieve high income density in tandem with the high population density of the zone. This is critical to the approach. Emphasis merely on labor productivity can result in a distorted strategy which marginalizes large proportions of the rural population. The important point is to generate maximum livelihood for the farmers, fishermen and landless agricultural workers from the use of the best resources in the zone. Resource-use intensity will require the supply of inputs and the installation of post production and post harvest facilities. The livelihood generation therefore will be at primary as well as secondary and tertiary sectors.

Key to the whole approach is a detailed land-use management strategy. In fact a land-use planning exercise such as set forth in the FAO manual can be the framework for the design of the strategic development plan for each zone. The major modification in the process would be to substitute for the conventional LUT or land utilization type, the systemic structure defined in the land use mode.

The procedure would substitute a more "general equilibrium analysis" in the definition of land use options as opposed to the "partial equilibrium" approach used in the more conventional process.

A comparison of the land-use options given the resource endowment and the population density typical of the ecological zones in the country will bring out the need for adopting a Japanese-type "unimodal" system: a household-based, small-farm, owner-tilled agricultural system to achieve the combination of high income density-high population density.

This argues for the use of the ecological zone as the unit of analysis and of planning. By the same token, in order to achieve the target income-density objective, the ecological zone must also become the unit of organization. This completes the combination of policies: agrarian reform to achieve a unimodal structure: small-holder, owner-tilled, intensive and diversified agriculture; decentralization, to achieve a bottom-up, fully participatory organization and management configuration.

It also sets the comprehensive agrarian reform program in its appropriate place as a lynchpin program. There is a problem in the way it was conceived, however. The Program focus is on land distribution - viewing Agrarian reform first as a land redistribution program that requires a whole set of preliminary and complementary subsequent programs to prepare the farmer beneficiaries for their new role as landowners and then to provide various services as support to enable the FBs to make productive use of their lands.

In fact this puts the agrarian reform program in a poor and false light. The logic should be as follows:

1. The Country's strategy for recovery, reconstruction and reform requires the fuller utilization of the country's resources of agricultural land, rural manpower, installed industrial capital assets.
2. The two major resources that are not now efficiently utilized are the country's nearly 10 million hectares of agricultural lands, and the adult labor in 6 million rural families. The average net value added from the use of our arable lands in 1987 was some US\$500 per hectare compared to US\$9,074 in Japan, US\$5,366 in South Korea, US\$3,939 in Taiwan and US\$2,262 in China. The rural underemployment probably averages over 50%.
3. To achieve the improvements in utilization rates of land and labor, and raise productivity and incomes in the farms up closer to comparable levels in countries with similar population densities, will require a massive program of investments in irrigation and drainage, rural credits, post-harvest facilities, rural infrastructure, and a mobilization of assistance programs for rural extension and field supervision.
4. These investments, however, would not achieve their impact in raising utilization rates and productivity unless there is a fundamental change in the farm tenure patterns. The highly intensive modes of

cultivation that produced the dramatic increases in per hectare production and incomes in the countries mentioned would not have resulted if the tillers had not been given ownership of the lands they worked. Agrarian reform is thus an indispensable prerequisite if the heavy investments required to stimulate the desired growth in agricultural production are to achieve their intended results.

In making CARP a prerequisite of an over-all rural development program, this shift in emphasis requires that agrarian reform be not merely another program of the nation but THE PROGRAM of the nation. As such it must contain the expected goals of the program and a quantitative estimate of the production, productivity and income targets of the entire program.

Overriding Issues and Constraints

The actual application of the analytical, planning and organization approach suggested here faces three major obstacles:

Very strong intellectual mindsets prevailing in powerful sectors of society: political leaders, the bureaucracy, the private sector and academe.

Economic and political interests around the conventional enterprise-based modalities, particularly those characterized as "enclaves".

Rigidities encrusted in existing political, administrative and business institutions.

Certain propositions on development represent the conventional wisdom and they are held with the conviction of religious beliefs.

The large-scale plantation is a more efficient mode of agriculture than small owner-tilled farms.

Only industry can generate sufficient jobs to absorb our growing labor force.

Appropriate macro-economic policies (monetary, fiscal, commercial) favoring agriculture, together with infrastructure development are necessary and sufficient to induce rural development.

The Government's strategy has gone through three stages.

The first stage was focused on creating a competitive and free enterprise macro-environment to restore the operation of free markets (dismantling of monopolies and privatization of government owned enterprises and physical assets), stimulate private sector investments, and pump-prime the economy through rural public works - strongly "neo-classical" with a touch of Keynes. The main instruments were monetary and fiscal policy, trade liberalization, maintenance of peace and order and infrastructure construction.

In the second stage, the focus was on rural development and poverty alleviation programs, emphasizing agrarian reform, devolution of powers to regional and provincial governments and improvement in the delivery of social services.

The third stage was largely influenced by the sixth coup attempt during the first four days of December 1989 which highlighted a widespread feeling that the government was not reaching the people with programs that had noticeable impacts on their livelihood. This was marked by more serious attempts at closer coordination of government line departments, enhancement of service delivery in the field through more "integrated" approaches in project design and management in the field, and establishment of close links with non-governmental organizations (NGOs).

The "Countryside Agro-Industrial Development Strategy (CAIDS) was formulated by the NEDA and adopted by the joint Cabinet-NEDA Board on December 20, 1989 (a little over two weeks after the latest coup-attempt). Of some eight elements, the two that represent the new thrust are: (1) "better policy integration and closer coordination in the planning and implementation of development programs within a more decentralized administrative structure" and (2) Encouraging participation of non-government organizations (NGOs) and communities in the planning and implementation of development programs as a method of popular 'empowerment'.

That should be a major strategic thrust of assistance programs for rural development to work with Government, NGOs and business enterprise in the Philippines,

To design programs that put poverty-eradication into the mainstream of the

development projects that establish major agro-industrial investments;

To work agro-industrial community development plans in defined ecological zones into specific and rigorous, economically, technically, socially, politically as well as financially feasible and viable projects that eventually qualify for financing packages that contain standard commercial financing components;

To build-up the body of technology attuned to the needs of such area- and community-based development packages - the civil, mechanical, energy engineering systems, the agricultural and biological sciences, the physical planning and architectural modules, the managerial sciences and art, the computer and communications hardware and software combinations, the economic, econometric and social accounting technology;

To assist in the training of managers, supervisors, technical specialists, engineers, production, marketing, control systems manpower who will man positions in area- and community-based organizations.

To assist in actual project-identification and development work, feasibility study preparations for project modules for the re-organization of these rural communities into thriving agro-industrial communities.

Investment Criteria and the National Interest

The strategy will be meaningless if it is not reflected in actual investment decisions. The logic must be embodied in the criteria used in determining the actual projects in which both private and government capital are applied. The development strategy must become investment strategy. To assess the national interest implications of investment policy, requires understanding of:

1. The macroeconomics of national resource allocation,
2. The analysis of "cost of capital" to the country
3. The measurement of national returns to capital
4. The evaluation of different concepts of internal rates of return (IRR)

National Resource Allocation

The evaluation of financial transactions must probe into the underlying real transactions, the resulting patterns in the allocation of the nation's natural resources, manpower and physical capital. This is the national resource-allocation question.

1. Consider the Philippines one family of 75 million people in 15 million households living on 30 million hectares of land. Day to day living in this family requires supplying food, clothing, medicines and health services, utilities, school supplies and other educational facilities, recreation facilities, police protection for the family. These are supplied directly by the farms, factories, and commercial and other service plant in the country.

1.1 Some needs are supplied directly from domestic production,

1.2 others only indirectly by exchanging exports of goods, services and labor of the Philippines for imports from abroad.

1.3 Still others are financed by foreign loans, investments and grants.

2. Over each given period, the country must have the commodities to meet those day-to-day needs, supply the exports used to pay for our imports, plus the materials, services and labor to maintain the country's existing plant and improvements in the farms, factories and other service plants and to expand those productive facilities. Its capacity to meet those needs is limited, at any one time, precisely by the physical quantity and productive qualities of natural resources that are already under exploitation, the plant and facilities already installed and the ready and trained managerial, technical and labor manpower already deployed in these farms and factories.

3, Gross national product is the sum of the actual flows of goods produced for consumption of households, for government operations, for capital maintenance and expansion and for exports less purchases from abroad of imports and earnings of Filipinos from abroad less payments to foreigners for manpower services, royalties, interest and earnings on capital of foreigners in Philippine businesses. The country's capacity to turn out a volume of that GNP is limited by

3.1 the quantity and quality of the deployed natural, manpower and

capital resources,

3.2 the volume and purchasing power of our exports abroad, and

3.3 the ability of the country to raise grants, loans and investments from abroad.

4. This is the important point: the fact that at any one time that capacity is limited and what is directed for one purpose is taken out of another use. This is true of each type of resource in varying degrees depending on relative abundance or scarcity.

4.1 True of land of different specifications,

4.2 of labor of specific skills, experience, training, of managerial and technical personnel,

4.3 of different types of installed physical capital,

4.4 of foreign exchange reserves, as well as of external financial sources, loans and investments, available to the Philippines, at different terms.

5. In the end, and at the bottom line, the real cost to the country of resources used for one package of purposes is the gain foregone from using those resources for an alternative package of purposes.

5.1 We speak of "packages of purposes" because resources are productive not singly but in combinations for interrelated groups of purposes. At the macroeconomic level, it is more realistic to think of "investment programs" than single investments.

5.2 These programs may be designed with narrow purposes such as the production of a single family of products such as polyethylene and polypropylene resins.

5.3 They may be more broadly conceived with multiple products such as an industrial estate or an agro-industrial community in defined geographic areas, etc.

5.4 At the most comprehensive level they may be alternative national investment strategies, each defined in enough detail to be able to

estimate expected costs and returns for each strategy.

6. In speaking of resources, we must remember we are speaking of real rather than financial resources - that is to say cement, reinforcing bars, lumber, rice, corn, livestock and managerial, professional and labor services, kilowatts of power, barrels of oil, etc. Financing is merely the means by which any group, private, government, is able to appropriate these real resources for their purposes and away from other competing uses.

7. Here we must distinguish between domestic and foreign financial assets.

7.1 Domestic financial assets are only as good as the available domestic real resources. Domestic finance can be created by the Central Bank for example. But real resources can only be produced with existing and already deployed real resources.

7.2 Foreign financial assets, however, can purchase real resources from other countries, and therefore become a source of real supply over and above the Philippines' capacity limit. Therefore, foreign exchange reserves are a real resource, but peso balances are not.

8. What happens then when the Central Bank creates money to liquidate an external obligation in a debt-equity swap?

8.1 It supplies the investor with purchasing power to bid away from other uses real materials and services flowing into the economy from either inventory or current production.

8.2 It permits the investor favored with the created currency to use resources for its "investment program" at the expense of investors who find their own investment programs prohibitive at the new costs.

8.3 The cost to the country of the money-creation is measured by the benefits that would have accrued from the foregone investment package. The country enjoys a net gain if the benefits from the investment package actually realized are greater than those that would have materialized from the aborted programs.

[Insert here a discussion of macro-resource analysis of the Philippines in light of a) external debt service b) essential imports including oil c) critical consumption level d) maximum domestic savings capacity and e) foreign resource mobilization capacity. In light of livelihood growth requirements of growing

population, work force and dependent population.]

Measuring the Cost of Capital

The analysis of "cost of capital" is a familiar exercise in corporate finance. Applying the concept to the country as a whole requires a careful application of the analogy. The simplest structure brings out the concept of cost of capital. The perspective is the country's. All capital raised locally and owned by Filipino nationals would be internal capital. The cost of this is measured purely by the opportunity cost, the returns foregone from alternative uses. The point simply is that domestically-sourced financing, while not entailing a transfer of resources abroad, is not without a national cost.

1. Given the resource endowment of the country, the character of its people, the configuration of institutions and man-made capital endowed by its history, there are patterns of investment strategies that induce optimum development. These represent investment packages in particular chronological sequences that describe alternative development paths. Each strategy results in a trajectory of growth in population incomes and welfare.

2. Every allocation of resources to a package of investments represents a choice among these strategies. The resources used for one package are denied to other packages. They launch the economy along one development path rather than another. If the path chosen is suboptimal, then the benefits that might have resulted from an optimal path are foregone. The difference represents a cost. Call this the resource-allocation distortion cost.

3. Even purely domestic investments then represent a cost to the economy. Neoclassical growth theory assumes that prices determined in a pure competitive situation will assure that resources go to the investment packages that are optimal. In real life, however, the conditions of pure competition do not exist. Policy interventions attempt to make-up for this absence.

External finance whether in loan or equity entails over and above the opportunity cost, a resource cost represented by the interest, fees or dividends that must be paid to service the financing. Foreign finance thus involves a twofold cost: the real resource cost and the opportunity cost.

Since the opportunity cost is something it has in common with purely domestic finance, let us focus for the moment on the real resource cost of foreign capital.

1. The cost to the country of foreign borrowings is readily understood. Foreign loans must be serviced with fees, interest and amortizations paid in foreign exchange. These must be covered with a transfer of real resources - the export of merchandise or services.

2. What has not received as much emphasis is that foreign owned equity must be serviced as well with dividends reinvestments of undistributed earnings and eventual repatriation with possible capital gains. Foreign equity can therefore be more costly than foreign debt.

3. The returns accruing to foreigners on their equity in Philippine companies originates from two sources:

3.1 the earnings from the assets in which the capital is invested;

3.2 and earnings from the difference between the fixed interest on local borrowings and the earnings on the local assets.

4. The second needs to be explained.

4.1 If the total capital assets (plant and equipment, average inventory and accounts receivable, etc.) of a company amounts to, say, a billion pesos and the net income before deducting interest on borrowed funds comes to P250 million a year, the return on total assets is 25% per year.

4.2 If this were financed totally with equity, the shareholders would make 25% before income tax. If the earnings were exempt from income tax, and were declared as dividends, the foreign investor who brought in US\$50 million at an exchange rate of P20 per \$ would get \$12.5 million and make 25%. The foreign equity of US\$50 million would cost the country 25% per year.

4.3 However, if half were financed with local borrowings at a cost of 18 % per year, then the interest cost would be $.18 \times P500$ million or P90 million, the net income would be P160 million. On P500 million of equity this would be a return of 32% per annum. The 25% is the return earned on the invested assets, the extra 7% is the additional return from borrowing locally at 18% per year to cover local assets earning 25%. This is before Philippine income tax.

4.4 On the same assumptions of no tax and full dividend declaration, the foreign investor who now has invested only \$25 million would get \$8 million in dividends. He would make 32% p.a. His \$25 million would now cost the country 32% per year. Permitting the foreign investor to borrow

locally would have cost the country another 7% per year.

Several important conclusions flow from the analysis:

1. First, the Debt-Equity Swap is a prepayment of a foreign debt at a premium (over the market price of the debt) in which the proceeds are "reinvested" in approved stocks of a Philippine corporation. The premium over the market price of the debt becomes part of the cost to the country of the foreign equity.

2. Second, in the case of the relending facility, the Philippine debt is liquidated in foreign exchange. The premium over the market price of the debt becomes the consideration for the fresh money that is brought in and becomes part of the cost of the new money.

3. Third, aside from the real resource cost, the DES and RF transactions divert local resources, such as land and other natural resources, construction materials, power and "wage goods", to the investment packages of the foreign investors. If these packages represent a use of local resources that is less efficient than other investment packages in generating local value-added, then there is an opportunity cost that must be added on to the cost of capital.

National Returns from Investments

It remains now to look at the measurement of the benefits that a country gets from investments. Benefits equate with revenue. But revenue concepts are relative to particular investment concepts. Even in a private corporation, the revenue cover for total assets is the most comprehensive. The revenue cover for creditors with differing seniorities will differ from the cover for shareholders.

Investment Concepts.

1. In a private project, the total capital of the corporation is supplied by creditors and shareholders.

2. From the view of the national economy, however, the individual private project is only part of a total national investment package that is itself part of an over-all development strategy and investment program.

3. The total resource commitment is larger than the items entered directly into the capital budget of an individual project. Some of these are

directly measurable even in an accounting sense. Others have to be quantified in an economic analysis exercise, with some "heroic" assumptions. Still others may have to be considered as "qualitative" considerations.

Revenue and Net Income Concepts.

1. Commodity-producing projects turn out products that are tradeable, such as finished or intermediate products for consumer or industrial use, or non-tradeable such as electric power, water, transport services, ice, etc. Tradeable goods are destined either for import-substitution or for exports.

2. The usual approach of the Central Bank and BOI confines the definition of the investment package to the single project and then takes the cif foreign exchange value of the import substitute or the fob foreign exchange value of the export to get the annual gross revenue.

2.1 The inflow-outflow analysis that becomes the basis of evaluation is an estimate of the direct foreign exchange cash flows: on the outflow side, taking only direct importation of feedstock intermediate and raw materials, royalty payments and technical and management fees paid abroad, dividends and debt service.

2.2 The resulting net figure is a loose concept of net foreign exchange saving or earning, not a more rigorous concept of net economic return.

2.3 In general, the approach assumes that local costs - local materials, fuel, manpower, depreciation, rents - are not a cost.

3. To get at the true benefit-cost picture from the whole country perspective,

3.1 the investment package must encompass the whole "program" that includes the use of natural resources (land, forest, or mineral reserves), the use of government capital resources for infrastructure, utilities, etc., and the use of local as well as imported inputs.

3.2 The total investment resources used in production must thus be identified, to include both imported and domestic resources. The distinction becomes important merely to make sure that they are being valued at costs which reflect their true scarcity value at the present time.

3.3 The net revenue must then also value the production and sales at prices that reflect the full utility (direct and indirect) of the product to the Philippine economy, as import-substitute, export, or strategic intermediate product.

3.4 The direct and overhead costs must also reflect the true scarcity value of imported as well as local inputs in order to get a proper value of the net revenues from the projects from a national point of view.

3.5 It is still useful to have a subsidiary breakdown of the strictly foreign exchange cost components provided it is understood that even local inputs have import content that are not captured in a simplistic accounting only of direct foreign exchange outflows. (I understand in the vehicle manufacturing industry, that parts sourced locally are considered local content even when they are entirely imported by the local suppliers.)

The Measurement of Rates of Return

We now come to a measurement, the technical character of which needs a bit of detailed explanation to be appreciated. The problem arises because:

1. Investments are a stock of resources (assets) that must be put in place in full at the beginning of a period in order to generate a stream of production and incomes over the years of their future life. The problem: how do you equate a stock of assets at one point in time with a series of flows of incomes over a period of time?

2. The answer is by discounting. What does this mean? Several interpretations that are equivalents.

2.1 A sum to be received at a definite future has a present value which is less by a discount rate.

For example: P161,051 to be paid five years from now is worth P100,000 now if the discount rate is 10% per year.

2.2 10% is also the internal rate of return (IRR) of an investment now of P100,000 which pays a lump sum of P161,051 five years from now. IRR is the rate of discount which makes a lumpsum payment of P161,051 five years from now equal to a present

investment of P100,000.

2.3 If, instead of a lumpsum payment at the end of five years, we were to receive annual payments, then equal annual payments of P26,380 for five years would give an investment of P100,000 an IRR of 10% per year. Also, the Net Present Value of P26,380 annually for five years would be P100,000.

3. Every investment package therefore for which we can calculate the value of the present assets that must be mobilized, and the stream of future net earnings that they will yield will supply a calculated Internal Rate of Return (IRR) which measures the efficiency of the resource use from the national point of view.

4. Against that Rate of Return we must now compare the various concepts of "cost of capital". The calculated IRR is obviously the source of benefits from the investment package. It will be distributed among different sources of financing depending on the terms negotiated for each source.

4.1 If the total package were financed entirely by equity owned by Philippine nationals, then the cost of capital would be equal to the IRR. The IRR would go entirely to the Philippine nationals - private and public sector combined.

4.2 But this is not the case. Out of the total IRR of the investment package, a major portion may go to foreign suppliers of capital. This then represents a real cost that has to be deducted from the total returns to the country. What is left will be the net gain for the country.

The cost of foreign capital will be a composite of (i) cost of debt capital and (ii) cost of equity. As mentioned above in Paragraphs 3 and 4 the real cost of foreign equity may be augmented by domestic leverage, i.e. borrowing locally at an interest rate less than the return on the assets.

4.3 Finally, we must factor in the opportunity cost resulting from the effect of the foreign investment on the allocation of domestic capital resources. In capital-budgeting exercises the rule for optimum use of capital is: do not allocate capital resources to investment packages with lower IRRs for as long as there are investment packages offering higher IRRs. The investment packages showing higher real IRRs may not be attractive to foreign investors (for reasons of rate, risk or even simply taste) - or alternatively, the incentives offered by BOI and the DES and RF, may result in distortions that make those

investments attractive to foreign investors which have lower over-all IRRs from the point of view of the country as a whole. In these cases, the difference between the more nationally profitable investment programs and the investment programs that actually get the resources becomes an additional cost of the foreign investment.

5. How do we measure the cost of capital? The measurement is the reverse side of the measurement of return.

5.1 In an investment, we put out present resources which are then "paid back" in the form of periodic (monthly, semestral, annual) incomes over a span of time (5, 10, 15, 20 years) in the future. In our example above, P100,000 invested now against incomes of P26,380 per year over the next five years, gives an IRR of 10% per annum.

Negative 100,000 now against positive 26,380 per year for the next five years equals IRR of 10% per year.

5.2 The mirror opposite of that is the view of the project itself receiving the investment. It receives values now of P100,000 and pays annually over the next five years P26,380. The P100,000 now costs it 10% per annum.

Positive 100,000 now against negative 26,380 per year for the next five years equals IRC (Internal Rate of Cost) of 10% per year.

The Petrochemical Project

Let us now apply the analytical framework to the Philippine Petrochemical Project. The procedure requires arriving at:

1. An appropriate definition of the suitable "investment program" within which the project is set, so as to identify the deployment of other resources not included directly in the project direct capital budget - e.g. land, land development investments, infrastructure, additional power and utility capacity, etc. which are assumed in the project, but not provided for in its budget. This will make it possible to arrive at a total "real capital" figure which represents the total (direct and indirect) investments demanded by the "investment package". The "investment program" should have an area dimension and the

selection of the area should be meaningful in terms of factoring in the ecological sustainability of the natural resource use. The area should thus be an ecological zone - a cohesive ecosystem so the ecological cost of the usage can be consolidated into the operating costs. The zone's "citizens" - its population should be considered as having priority over the income generation from their resources, so the revenue or benefit measurement should take into account the gross value added accruing to the population of the zone.

2. The consolidated revenue streams priced at suitable international prices. The consolidated variable and fixed costs with the inputs priced at market adjusted for whatever distortions (taxes or subsidies or artificial constraints, e.g. price ceilings on fuel or on electricity rates) may cause deviations from true scarcity values. Also, the resource depletion, maintenance and preservation cost should be explicitly included as a cost item in arriving at the net revenue figure. The resulting figure should be "gross value added" measured at two stages: first from the viewpoint of the local area "citizens" and then from the point of view of the country as a whole, which means that all incomes that accrue to "foreign" factors should be netted out. And "foreign" should at stage 1 be all non-citizens of the local zone, and then at stage 2 all non-citizens of the country.

3. From the above two figures, the investment build-up during the pre-operating period, and the stream of gross value added over the operating period, it will be possible to arrive at the IRR of the "investment program".

An appropriate analysis will estimate the cost (to the country) of the foreign debt and equity capital, to see, of the total return to the country, how much will actually have to be given up to foreign capital sources to pay for capital technology and management.

The appropriate concept of return is Gross Domestic Value Added which would include wages, salaries, rents, interest, profits and depreciation allowance. This would reflect the total domestic income generation possibly adjusting the number for some income distribution coefficient - weight income by number of people benefitted.

A further adjustment is called for by the scarcity value of certain kinds of local manpower - e.g. technical and managerial. How reflect the use as a cost versus

alternative uses? The same Computable General Equilibrium Model for an ecological zone would show the GVA productivity of this manpower in the alternative investment program. If the productivity of the scarce manpower resource is higher in the alternative than in the investment project under consideration, then the difference should be charged to the latter as a cost. If the productivity is higher in the project under evaluation, then the full compensation is included as a part of gva.

It will be noted that the concept of return here would correspond to the reciprocal of the ICOR (Incremental Capital-Output Ratio). An ICOR of 4:1 is a 25% return whereas an ICOR of 1.5:1 is about 66 2/3% p.a. In other words, any return lower than this would tend to bring up the overall average ICOR.

In an appropriate development path, the investment programs have the effect of making investment packages undertaken in the proper sequence suitably attractive in succession. It also makes unattractive investments that are not yet timely. This result is achieved in the evaluation criteria if the following procedure is adopted:

1. The country is divided into "ecological zones" each zone being a scientifically identified discrete ecosystem with its own internal and natural systemic integrity and economy. This means the natural sustenance of the system - the water cycle, the geological integrity, soil, water, biological balance - plant, animal biodiversity and nutrition cycle, etc.
2. Using these zones as the bioeconomic units of analysis, a "highest and best use" valuation is undertaken taking the usage that would result in the highest returns for the "citizens" of each of the zones from the sustainable usage of their natural resources and the application of the required capital, manpower and other resources. These "highest and best use" analyses will also result in bottom-line gross value added (incomes) for each of the local populations with particular distribution patterns - also by labor force of particular skills.
3. These valuations will then become the "shadow prices" to be used in establishing the investment values of resources diverted to uses other than these "highest and best use" investment packages with the zonal investment programs, and the cost values of operating resources, e.g. manpower of various skills and relative scarcities.
4. The characteristics of these resource-use programs and packages will be defined in Computable General Equilibrium" (CGE) models to identify

intersector linkages, forward and backward, and second and third generation multiplier effects from each sectoral investment package or project. The effects then take both the "Leontieff" intersector multiplier effect resulting from the forward and backward linkage factors, and the "Keynesian multiplier" from the income-consumption expenditure impact within the zone, as well as the zonal savings-reinvestment effects also within the zone at stage 1 and nationally at stage 2.

5. The resource-budgeting rule for optimization is: do not devote capital resources to uses with lower IRRs as long as there are still uses showing higher IRRs. By generating appropriate "shadow values" then, and if the capital budgeting rule is followed, the investment criteria will ensure a project selection which will keep the economy on a development path that is economically, ecologically, socially and politically sustainable.
6. By establishing the "highest and best use" investment packages for each of the ecological zones and calculating rates of returns, we can establish proper values for land, labor and capital resources and charge the opportunity cost when these resources are diverted to specific project uses. The resulting IRR will then be fully reflective of the opportunity cost of the resources devoted to the project in question.

Let me illustrate the implications of this analysis in an example with parameters that are hypothetical but realistic for specific areas in the country.

1. The ecological zone is a territory of 100,000 hectares with the following land characteristics:

Topography:	Hectares
lands 0 - 3% slope	18,000
>3 - 8%	22,000
>8 - 18%	34,000
>18%	26,000
 Total	 100,000

Soil Types	
Hydrosols	800
Broad Alluvium	16,000
Piedmont areas	22,000
Plateaus	21,200
Mountain soils	40,000

The Household Population 45,000 270,000

Potential land use:

Community GVA per hectare

Stage I P 50,000 per hectare

Stage II P 150,000 per hectare

Stage III P 375,000 per hectare

Total P 575,000 per hectare/ year

Net present value @ 10% = 5,753,468/ha.

Industrial Estate Project: Land use 1,000 hectares

Land value per hectare P5.75 million

Infrastructure & other facilities P 9.0 billion

Plant & Equipment Investments P 10.0 billion

GVA stream 15,000 employment x 100,000*=P1,500,000,000

Total Investments = P24.75 billion

IRR about 1.9% p.a. over 20 years

* GVA per worker average

2. When resources are valued at "highest and best use" potential, it is difficult to find a highly capital intensive enclave project that will offer as high an IRR as an integrated agroindustrial project based on intensive, diversified agriculture. As these projects are saturated, however, and the cost of wage goods come down, then imputed resource values come down low enough so that capital-intensive projects become attractive. This is the industrialization phase that the NICs have just gone through. The third stage follows from the scarcity of natural and manpower resources in the NICs which makes it interesting for these NICs to establish enclaves in those countries that precisely do not see the potential of the agroindustrial development phase through which the Japans and Taiwans and Koreas had already passed and as a result undervalue their land and manpower resources. With the low rates of utilization of our agricultural lands, the Philippines is still some ways from this stage and we will not get there by attempting shortcuts that take us in a different direction.

Cost of Capital

Against this over-all return we then calculate the cost of foreign capital. Let us now apply the Cost of Capital analysis to the LPC project. As I mentioned the data is incomplete as we only have the foreign exchange cash flows. But even then, there are certain key points that must be emphasized in the debt equity swap and the relending facility:

1. We must assume that the option is available to the C.B. to retire debt through purchase of Philippine debt instruments in the open market at a discount. Therefore the surrender of debt instruments to the C.B. should be treated as a foreign exchange inflow equivalent to the market price of the instrument at the time of delivery to the C.B.
2. Since the swap must be deemed a prepayment of the debt, it is not correct to give the project a credit for the equivalent interest savings on the retired debt. In other words, the interest saving is due to the prepayment of the debt and not to the investment of the project proponent. The investment of the proponent is in the equity of the project!
3. This is true in both the DES and the RF. We must not confuse the country's over-all cash flow with the cash flow arising from the foreign investment. The surrender of the debt instrument for prepayment either in pesos (DES) or in foreign exchange (RF) and the use by the proponent of the proceeds to buy common stock or foreign equipment is the proponent's cash flow. The liquidation of the debt and the resulting saving of the country is the CB's or the country's, but is a separate transaction.

The cost is viewed from the standpoint of the country. Both foreign owned equity and foreign debt are obligations of the country which must be serviced with net outflows of resources.

1. The Equity inflows would thus be:

1.1 The net foreign resource values received by the country as consideration for the equity position of the foreign investor in LPC are:

Direct & Advanced equity	\$150.80 million
D-E Fresh Money	15.00 million
CB Debt Paper	16.65 million
 Total	 \$182.45 million

1.2 Note that the CB debt paper is taken up at market price from the point of

view of the country inflows, but entered at \$30 million for the country's external obligations. The equity to be serviced is \$195.8 million whereas the country only received \$182.45 million in values. The \$13.35 million is the added cost of getting the extra fresh money of \$15 million in the debt-equity swap.

1.3 The cost of the equity would be the sum of

- o The prorata share of the foreign investor in the annual earnings.(The difference between the annual earnings and the dividends declared and remitted is considered a reinvestment by the foreign investor)
- o Plus all royalties and other fees received as consideration for the investment.

1.4 The projected earnings on an accrual basis were not in the data. Only the dividends have been projected. Based on dividends and royalties alone, the discounted cash flow cost of the equity is 2.2 % per annum over the 14 year horizon (four years preop and 10 years operation). This obviously does not reflect the full cost since it would take no account of the increase in the foreign investor's participation in the growth of the project's network.

1.5 The data submitted to the Central Bank by LPC shows however the projected net domestic and export sales of the project. The "cost of equity" to the country would vary at different percentages of net income to sales and changes in the exchange rates. (The exchange rate would not affect the equity cost however if the project is able to price the product at a parity with landed cost of imports.)

Net Income as % of sales	IRC % p.a.
5 %	.19 %
10 %	7.84 %
15 %	13.54 %
20 %	18.21 %
25 %	22.23 %

Assuming full full import parity pricing and no lag between exchange rate adjustment and the time of translation of net worth into the currency of the foreign investor.

2. The cost of foreign loans combines the multilateral loan and the funds generated from the Relending Facility.

2.1 The relending facility involves

Fresh money loan	\$ 10.00 million
CB Debt instrument	27.75 million

Total	\$ 37.75 million

Discount passed on to local banks	\$ 14.00 million

Net value received	\$ 51.75 million

Peso Pronote in \$ Equiv.	\$ 60.00 million

Net Premium Cost	\$ 8.25 million

For this consideration, the LPC gets a credit of \$60 million. Of the difference of \$22.25 million, however, \$14 million is shared by the relending bank with the local banks. The \$60 million is converted into a peso promissory note which is then discounted by the Relending bank with the Philippine banks for the peso equivalent of \$46 million. The net premium paid by the country is 8.25 million for the fresh money of \$10 million.

- 2.2 The discount of \$14 million passed on to the local banks is in turn passed on back to LPC in the form of a favorable interest rate on a peso loan. It will be seen in the calculations that the peso loans turn out cheaper than the foreign exchange credits. For the country, this subsidized credit gets translated back into a cost of equity through the "leverage" effect: the difference between the cost of the peso loans and the return to the foreign investor from the average earning assets.

- 2.3 The total foreign loans are tallied as follows:

	Values Received	Obligations entered	
Cash Credits	63.853 M	Foreign Loans	\$63.853 M
Fresh Money RF	10.000 M	Relending Bank	60.000 M
CB Debt paper (At market)	27.750 M		
Discount for Local Banks	14.000 M		
	-----		-----
Total	115.603 M	Total	123.853 M
	-----		-----
Premium paid			8.250 M

2.4 The \$60 million credit is then converted into peso loans of P1,320 million, leaving a net foreign liability of \$63.853. Based on the repayment schedule the resulting average cost to the Philippines of the foreign loan is 22.61% per annum. The average cost of the peso loans to LPC would be 18.48% p.a. These calculations are shown in the attached table.

If we had the P&L data to measure the projected accrued earnings annually, and the balance sheet information to determine what percent of the equity the foreign investors have, we could then show the total cost to the country of the foreign equity and the portion of the cost arising from the return on total assets and the portion resulting from the peso leverage loan. The combined flows then equity plus debt against the total service on loans and equity would give us the average total cost of foreign capital. This would then be compared to the average return the country gets on the investment program to see if we are getting returns comparable to the cost.

For example if we assume alternative estimates of net income accruing to the foreign investor, then the over-all cost of foreign capital (debt and equity) would be in % p.a.

Net Income % of Sales	Avg Cst of For. Cap.
5 %	4.21 %
10 %	10.14 %
15 %	14.83 %
20 %	18.79 %
25 %	22.28 %

The Logic of Optimum Capital Budgeting

All this says is that it makes no sense at all for the country to raise foreign capital at an average cost of say 15% to 20% per annum to invest in assets in the country that yield returns of only 5% to 10% per annum.

Neither does it make sense for the country to divert local capital resources - private capital of local investors and infrastructure capital of government - from investment programs that return 40% to 60% to the country to support foreign investment-promoted projects that yield the country 5% to 10% per annum.

There is a high probability that this is what we are doing in the case of many projects that the Government is promoting.

To be able to do such a capital budgeting exercise, it is essential that development planning be conducted at the provincial and ecological zone levels in such a way as to provide the basis for giving holistic "highest and best use" valuations to the natural, human and capital resources of each province.

The present over-aggregated approach to economic planning does not provide that basis. As a result, it is possible for the Government at national and local levels to promote aggressively industrial, commercial, tourism and housing projects with the use of land and capital resources that would yield far higher returns in community incomes if employed according to a different development strategy without ever understanding the full cost of their decisions.

The provincial strategies that we advocate make explicit these highest and best alternatives through appropriate planning techniques and make those alternatives no longer hypothetical but real through appropriate organizational modules.

The alternative land use plans that make it feasible over a reasonable period of time to achieve a generation of gross-value-added per hectare comparable to those of countries like Taiwan and South Korea provide a valuation base that would make the conversion of prime-agricultural lands into industrial and commercial sites prohibitive. This would make it far more attractive to develop for non-agricultural uses only those lands that have marginal values for agriculture.