

© The United Nations University, 1980
Printed in Japan

ISBN 92-808-0134-1
ISSN 0379-5764

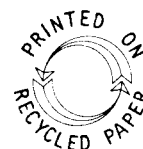
HSDRGPID-23/UNUP-134

**ECONOMIC INDICATORS AND THE GPID:
AN ATTEMPT TO BRING ECONOMICS
BACK INTO THE CHURCH WITHOUT
LOSING THE FAITH**

Kimon Valaskakis* and Iris Martin**

* Professor, Université de Montréal
Director, GAMMA Group
Suite 210,3535 Queen Mary
Montreal, Quebec

** Research Associate, GAMMA Group



This paper by Kimon Valaskakis and Iris Martin was first presented at the GPID III meeting in Geneva, 2-8 October 1978. It can be considered a contribution to the Indicators sub-project of the GPID Project.

Geneva, January 1980

Johan Gaitung

It is being circulated in a pre-publication form to elicit comments from readers and generate dialogue on the subject at this stage of the research.

CONTENTS

I.	THE PROBLEM	1
1.1.	The GPID Philosophy	1
1.2.	The Pivotal Role of Indicators	2
1.3.	The Poverty of Conventional Economic Indicators	5
II.	A BLUEPRINT FOR AN INTEGRATED SET OF SOCIO-ECONOMIC INDICATORS OF DEVELOPMENT	12
11.1.	Indicators of Objective Wealth: The Value-Weighted GNP	13
11.2.	Indicators of Accumulation	16
11.3.	Indicators of Eco-System Damage	17
11.4.	Indicators Relating to the Performance of Public Bureaux	19
11.5.	Alternatives to the Unemployment Indicator	21
11.6.	Indicators of Subjective Satisfaction	22
III.	CONCLUSIONS	25
	BIBLIOGRAPHY	27

I - THE PROBLEM

I.I. THE 'GPID' PHILOSOPHY

The 'GPID' Project is perhaps the most ambitious attempt at arriving at an 'integrated' approach to the problem of international development. As the acronym implies, it features the examination of 'Goals', 'Processes' and 'Indicators' of development in a holistic all-pervasive sense. It aspires at 'integration' in at least three ways. First, it is interdisciplinary, allowing no one discipline to predominate. Secondly, it is intercultural and international with the linkage between First, Second and Third worlds constantly emphasized. Thirdly, it considers at the same time the goal of optimum "development", (whatever that may turn out to be) and its two symmetrical aberrations, underdevelopment and overdevelopment, and how to avoid them.

In its attempt to be interdisciplinary, the GPID approach has naturally reacted to its intellectual predecessor, which has dominated international thinking for two decades: economic development. Indeed, economic development was seen in the late fifties and sixties as the panacea for all ills. In the early seventies, an ecological, limits-to-growth-type challenge was launched against purely economic expansion, the main protagonist of which being of course the Club of Rome. In the late seventies however, a more fundamental challenge emerged demanding that a fully integrated non-economic based vision of "development" be conceptualized. The GPID, then, is one of the most articulated incarnations of this new philosophy which, because of its antecedents, tends to be naturally anti-economic.

For good or for ill, but mainly for ill, the social science of economics advanced faster than political science, sociology or anthropology in the twentieth century. This was largely due to an early integration of mathematics and formal techniques into economic theory. The methodological advance had ill effects

because first, it tended to isolate economists from other social scientists and second it tempted the former to reduce human problems to superficial levels, which could be dealt with by number-crunching. The inadequacy of this number-crunching and of elegant mathematical formulas in the resolution of these human problems led to an increasing sense of alienation. Non-economists tended to view economists and especially econometricians as 'idiots-savants'. Economists countered by despising sociological theories as "cocktail-party conversation".

Within the GPID Project attempts to "bring economics back into the Church" have been treated with some distrust and apprehension. A fear exists that economic theory whether capitalist or marxist is based on a neo-classical paradigm of rational men and women maximizing their economic benefits - a paradigm largely inadequate to explain the richness of human experience. In our view, this fear is based on one application of economic theory and not on the intellectual body of the discipline itself. Indeed, in another article, we will attempt to show the relevance, nay even the vital need for an economic paradigm within the GPID methodology.¹

For the present, we will concentrate on the indicators aspect of the GPID methodology and examine the possibility of integrating economic indicators to that approach. But first let us review in summary fashion, the role of indicators in the GPID.

I.2. THE POTENTIALLY PIVOTAL ROLE OF INDICATORS

Although touted as a methodology, the GPID so far is just an approach. Its fundamental characteristic is to implicitly claim that once you have put together goals, processes and indicators of anything, you have fully understood it - whether that anything be development, eggs or disco-dancing. Indeed, the Martial Art of Zen archery or, for that matter, any oriental martial art possesses in it the analog of a GPID-approach: there is a consideration of goals, a study of processes and the identification of performance indicators.

¹ Forthcoming: K.Valaskakis, "An Intellectual Foundation for a GPID Economics" GPID-series.

The GPID is not yet a methodology because it has not resolved how it will 'put together' the G, P, I and D. The implied sequence is that goals are to be examined first, then processes and thirdly, indicators. Finally, 'D' will emerge as the synthesis of the other three. There are, of course, as many variants of that sequence as there are permutations of the four letters G, P, I and D.

Two other permutations though, are particularly important because they present alternate views. The first starts with 'processes' and then proceeds to indicators from which goals are ultimately inferred. Of Marxian inspiration this approach sees history as a series of processes which should be carefully studied.

From these processes which involve class-struggle, international rivalry, technological change, etc., a set of goals emerge which themselves evolve with the processes. Indicators are measures of processes and goals and come last.

The other major approach which is worthy of note is one which starts with Indicators. The rationale for this sequence may not be intuitively obvious. It is based on an analogy of the role of indicators and that of language. It can be argued that Indicators are to science what language is to thought itself. In the same way that thinking can only take place using symbols that stand for eventual referents, analytical processes in social science are bound and constrained by the richness (or poverty) of the empirical indicators available. A theory without a potential empirical indicator to confirm or disconfirm it, is little more than idle chatter. Similarly, an indicator without a solid theoretical grounding may, in fact, indicate very little.

The current world-wide interest in indicators parallels the revolution that occurred in philosophy in the first half of the twentieth century, when it was realized that many of the metaphysical controversies, that had occupied philosophers for centuries, were really semantic quarrels about the meanings of words. Without the existence of built-in ambiguities and emotional connotations, many philosophical debates became essentially unsustainable. One of the principal architects of this new way of thinking was, of course, Ludwig Wittgenstein and his work generated an interesting philosophical question which has some implications

for the GPID problématique. The question was: 'can there be a private language that exists only in our imagination?' To this, Wittgenstein says:

'Let us imagine a table... that exists only in our imagination. A dictionary can be used to justify the translation of a word X into a word Y. But are we also to call it a justification if such a table is to be looked up only in the imagination? Surely justification consists in appealing to something independent...

...(Or) suppose everyone had a box with something in it: and we all call it a "beetle"; no one can look into anyone else's box and everyone says he knows what a beetle is by looking at his beetle - then, it would be quite possible for everyone to have something different in his box - or the box might be empty - and yet the conversations would continue as if everyone agreed on what they were talking about.'

The problem is that in much of social science, there are 'tables' that exist only in our imagination and fictitious 'beetles' in our own private boxes. The problem is exacerbated by sloppy indicators which give the illusion of agreement as if we were talking about the same thing. In fact, we each look into our own private (ideological) boxes and decide to call what we see a 'beetle' even though it may bear no resemblance to what others also call a 'beetle'. In other words, we face the dual problem of an indicator with either too many unrelated referents or none at all.

There is therefore a strong argument in favour of not neglecting indicators even in the early stages of a G-P-I-D sequence. Although we will not contend that a I-G-P-D sequence is desirable, we will advance the proposition that linguistic clarification of "D" and of the indicators of D is necessary in order to meaningfully articulate "G" and "P".

Let us now review a special class of indicators, those that stem from macro-economic analysis and point out their structural characteristics.

1. K.T.Fann, Ludwig Wittgenstein The man and his philosophy.
Delta Book 1967, P. 175-177

I.3. THE POVERTY OF ECONOMIC INDICATORS

Conventional economic indicators are quite poor in two senses: first, they are incomplete and second, they are often misleading. At the same time, it must be recognized that, in spite of their severe imperfection, to eliminate them, disregard them and start from scratch may not be that useful or pragmatically feasible. Our approach here is to fully recognize their weakness and then outline avenues for improvement.

1.3.1. THE PRICE-MECHANISM AS PERFORMANCE INDICATOR

Of all the economic indicators that are familiar to the general public, two must be singled as particularly important. The first stems from 'micro-economics' which is the study of individual markets within the economy. This indicator is nothing more nor less than the level of relative prices. Indeed, the price-mechanism is supposedly the prime indicator of the relative importance of different products and services in the economy. Price-adjustments in theory are supposed to correct any structural imbalance in the economy. For example, the argument goes: if there is an energy shortage the price of energy should go up and thus eliminate the shortage by reducing the demand for energy. Similarly, it has been advanced if there is unemployment, this means that the demand for labor is too low. To correct this, the price of labor i.e. the wage-rate, should go down. Jean-Baptiste Say's celebrated law argued that as long as prices are flexible supply will create its own demand and that therefore, structural imbalances are impossible.

The mechanistic view implicit in this line of reasoning, which incidentally underlies the whole of micro-economics, is easily vulnerable to criticism. The first type of criticism correctly points out that even if mechanically true the automatic adjustment brought about by the price-mechanism is not helpful in real situations because certain equilibrium-prices (i.e. prices that will allow supply and demand to be equated) are unacceptable for social, cultural or human reasons. For example, a very low wage-rate might eliminate unemployment but at the cost of creating a subsistence-level proletariat as was the case during the British industrial revolution. Similarly an increase in the price of energy might well promote conservation but at the cost of extreme hardship.

The second type of criticism levelled at the price-mechanism is even more telling. According to this line of reasoning, price is an adequate performance indicator only in perfect markets with no externalities. As soon as markets become either imperfect or subject to externalities, the price response tends to be severely flawed. Market imperfections can arise from monopolies, lack of information, transaction-costs, etc. and these distort the efficient allocation of resources present in perfect markets. As for externalities, they arise from a conjuncture of events not measurable by prices. For example, traffic jams, pollution and environmental deterioration are real costs that are not reflected in the price of a product. Further, as Schumacher has pointed out, the price-mechanism is incapable of distinguishing between a renewable and a non-renewable resource.

The third criticism concerning the price-mechanism as a performance indicator is that even when it works, it operates with a serious time-lag. For instance, the price of a non-renewable resource may indeed rise but perhaps too late to prevent premature depletion of that resource. If such is the case, we are in what is known in system-dynamic terms as an "overshoot and collapse system". The price-mechanism which is supposed to act as a negative feedback loop operates with a built-in disastrous time-lag. As a result, the system overshoots and collapses.

For all these reasons, the price-mechanism which was Adam Smith's vision of the "invisible hand" of God coordinating and protecting markets is seriously flawed and cannot fully be trusted. But by the same token, we must not yield to the opposite conclusion and assert that because price is not necessarily a measure of true value it is never a measure of value and has no use. Quite on the contrary, the concept of 'price' and its underlying idea of 'cost' may be rehabilitated and reformulated to reflect social, cultural and ecological phenomena as we will attempt to show in Part II of this paper.

1.3.2. THE GROSS NATIONAL PRODUCT AS PERFORMANCE INDICATOR

The second major performance indicator for the economy is the gross national product (GNP). This one stems from 'macro-economic' analysis which views the overall performance of the economy. The GNP is the rough national equivalent of the annual sales figure of a firm or the salary of a wage-earner. Essentially the GNP measures the flow of funds from one sector of the economy to the other. There are three ways of effecting such measurement. The first is a factor-price approach which assumes that there are four factors of production: land, labor, capital and enterprise, each of which commands a remuneration. Land obtains 'rent', labor a 'wage', capital an 'interest' and enterprise a profit. By adding these up we obtain the total sum of money earned by productive agents for their services. This remuneration is supposed to reflect the economic value of the productive services themselves.

The GNP can also be reached by the 'expenditure' approach. In this version, expenditure by private consumers (C), by business ((I) for investment) by Government (G) and by foreigners (X for exports) minus national expenditure abroad (M for imports) make up the GNP. Therefore $GNP = C + I + G + X - M$.

Finally, the GNP can also be obtained by a value-added input-output analysis. This technique invented by Wassily Leonlieff measures the value added by one industry to another in the overall economic transformation process. This value-added is depicted in a square matrix and gives a global figure for aggregate economic activity in a given year.

All three GNP-computing methods are supposed to arrive at the same figure minus statistical discrepancies. It is important to note that they all have one thing in common. They measure economic performance by the level of perceived market-mediated activity. This is, at the same time, the strength and the glaring weakness of the GNP. We can now identify the five major structural weaknesses of this indicator.

(1) *The flow/stock problem*

The GNP measures a flow of money not a stock. What this means is that the economic activity of a nation is measured for a given time-period, usually a year, but the starting and ending points are not. In other words, the GNP keeps track of increases to a stock of wealth but not of wealth itself. The decrease in wealth that would result, say from the depletion of a non-renewable resource, is not accounted for at all. On the contrary, the faster we use up a non-renewable resource the higher the GNP.

The absence of a wealth-indicator to complement the expenditure indicator that is the GNP leads to manifestly absurd results when we consider, for purposes of comparison, the case of an individual's economic performance. Surely an individual who spends a great deal and uses up his capital is blamed rather than praised. Yet, a nation that does exactly the same thing is 'rewarded' by a high GNP which is considered a good thing, no matter what. The failure of the GNP to distinguish between a renewable and a non-renewable resource is one of the reasons why conservation measures always look bad in economic statistics. On the contrary, squandering looks very good. We are not measuring the 'level of water in the bathtub' (which is the stock of accumulated wealth) but merely the water flowing in through the tap and out through the drain. By adding these two flows, we get a perverted indicator of pseudo-performance which is very misleading.

(2) *The 'Blindness' Problem*

The GNP indicator measures all activity generated through the market-mechanism whether that activity is productive, unproductive or destructive. The GNP-accounts will give equal place to \$1,000 of food-products generated by the agricultural sector and \$1,000 paid to workers to dig up holes and fill them up again. An outbreak of flu leading to the greater sale of pharmaceutical products is translated by a positive increase in the GNP. The absence of an expected disease, on the other hand, leading to a decrease in the consumption of pharmaceuticals, reduces the GNP. An earthquake is 'good' because it leads to much reconstruction activity. A durable building is 'bad' because it reduces future construction demand.

At the limit, the best way to maximize the GNP is to have a war. As long as the productive system itself is not destroyed, war acts as a powerful effective demand on new production. There is a built-in squander society since an important proportion of production coming out of factories, such as tanks and airplanes go up in smoke. There is a need to build new ones ad infinitum.

It is statistically true that the U.S. Economy, for instance, never performed closer to absolute capacity than during the Second World War. In fact, from a GNP point of view, this war was ideal. The U.S. was shielded from bombardment and its economy was churning out war-material in gigantic proportions.

Second best to a hot war is a cold war which, although not consuming as much production, provides a steady demand for weapons which become technologically obsolescent and must be replaced. In explaining the existence of wars and evil in general, it is tempting to resort to the macchiavellian assumption of a conspiracy of sinister forces such as the military-industrial complex, the monopoly capitalists, etc. Although there is undoubtedly some truth in the conspiracy theories, we submit that the problem is exacerbated by our misleading economic indicators that tell us erroneously that all activity, productive, unproductive or destructive has equal value in the national accounts.

(3) *The 'Housewife' Problem*

The GNP indicator is designed to measure only market-transactions involving a monetary transfer. Thus, in the celebrated case of the unrewarded housewife, we face the situation of a certain Mrs. Brown, working slavishly at home with nine children and her work going unrecognized. Because no monetary transaction has occurred there is no item to enter into the GNP accounts. Across the street, on the other hand, Mrs. Smith instead of doing her own housework goes over to her neighbour Mrs. Jones and does hers. Mrs. Jones reciprocates by doing Mrs. Smith's housework. Just for the fun of it they 'pay' each other \$100. (or \$1,000. or \$10,000.) a week. The GNP accounts faithfully register these transactions and show an overall increase in activity.

The failure of the GNP indicator to account for non-monetary transactions means that it underestimates total economic activity. This problem is particularly serious in the case of developing countries where the non-monetary sector is quite large. This sector in fact includes two sub-sectors. The first is characterized by small self-sufficient units such as farms, etc. The second involves barter-exchange without the use of money.

Comparisons between the economic performance of countries with a large non-monetary sector and others with a small one are therefore misleading in exaggerating the gap in performance.

(4) *International Comparisons Problem*

Following from the above, it is obvious that a serious international comparisons problem exists. Above and beyond the existence of non-monetary sectors in the economy, there are at least four other factors making such comparisons hazardous.

The first relates to site-specificity. Obviously, the requirements for survival in the Arctic circle are different from those in Majorca. Two families with equal wealth living in each of these areas may not necessarily be equally well-off. The Arctic climate leads to considerable expenditures for protection against the cold that are not required in Majorca. Therefore, site-specificity must certainly affect the relevance of GNP comparisons.

The second is culture-specificity. Different cultures attach different importance to various goods. It would be foolish to attempt trans-national comparisons which do not take these differences into account. (This point lends support to the relevance of the needs approach of the GPID.)

The third is time-specificity. Comparisons across time are as hazardous as across space because of changing tastes, demographic composition, etc.

Finally, international comparisons are further distorted by the severe monetary exchange fluctuations that have become the norm in the international economic system. Overnight, the Japanese may become the richest people on earth by changes in the external value of the yen - without any real changes having occurred internally. The international comparisons now must constantly be updated to keep up with the vagaries of the monetary system.

(5) *The 'Externalities' Problem*

The GNP is, as we have seen, very selective in its accounting. It includes all market-transactions whether 'good' or 'bad' and excludes non-market transactions. It also excludes all costs and benefits of an external nature that cannot be attributable to one individual or group.

An example of a negative externality is pollution and environmental degradation. This, in most cases, is not accounted for unless there is a market transaction involving the payment of money for anti-pollution activity. The result is that by ignoring pollution we overestimate our economic performance by not subtracting from the benefits the hidden costs of production. When the costs do materialize they do so quite suddenly involving a breakdown of the system.

The GNP also excludes positive externalities. The pleasure of living in a healthy, pleasant and esthetic environment is not reflected in the national economic accounts, leading in these cases to an understatement of economic wellbeing.

II - A BLUEPRINT FOR AN INTEGRATED SET OF SOCIO-ECONOMIC INDICATORS

Faced with the difficulties involved with economic indicators (good answers to bad questions) and social indicators (bad answers to good questions), we are faced with a choice of approaches.

(1) *The conventional economic approach:* concentrate on the measurable indicators even if they are misleading and hope for the best with vague statements that "GNP does not measure happiness but only the possibility of happiness".

(2) *The social-indicators approach:* largely ignore the economic indicators and concentrate instead on either non-measurable very qualitative indicators or alternatively choose allegedly quantitative social indicators by compiling a few available statistics. Example: two often-found 'social' indicators are newspapers per 1000 inhabitants and hospital beds per 1000 inhabitants. It is unclear to this author what these indicators are supposed to mean. It is better to have more or less newspapers per 1000 inhabitants? It is better to have many hospital beds and a sick population or fewer hospital beds and a healthy one? The trouble with many social indicators is that they tend to indicate very little because no explicit behavioural theory underlies them.

(3) *The proposed approach for the GPID:* attempt to integrate social and economic indicators by retaining what is good in the latter and combining it with an intelligent integration vis-à-vis the whole question of basic needs. The requirements then for a good set of indicators are, to our view, as follows: the resulting indicators must -

- reflect a complex multidimensional human reality
- possess an underlying behavioural theory of needs, wants and their method of satisfaction.
- be empirically capable of assembly. .

(To single out an indicator that can never be measured is not useful. What we need is operationally significant criteria to judge progress or regression.)

This proposed approach leads us to advance a blueprint composed of seven new indicators which will gradually evolve to be meaningful and measurable and which, we believe, may shed new light on the development problématique.

II.1. INDICATORS OF OBJECTIVE WEALTH: THE VALUE-WEIGHTED GNP

This proposal would involve a system of weights to make the GNP measure more meaningful by responding to the 'blindness' problem mentioned in the previous section. We have seen that \$1,000 generated by hairdressers or manicurists or doctors or industrial workers is treated like a \$1,000 contribution to the GNP, no matter what the source. To remedy this 'blindness', it may be possible to multiply the individual \$ values from various sectors by an appropriate coefficient reflecting the relative importance of that sector. In other words, if we claim that milk is more important than manicure, we will assign a higher coefficient to milk production than to manicure. Although each sector will have generated \$1,000, the value-weighted GNP accounts will show two different mathematical products. If the agricultural sector has a coefficient of say 3 then \$1,000 in milk production is actually worth \$3,000 of manicure which has a coefficient of say 1.

In the present system, a dollar is a dollar is a dollar. The GNP-accounts do not tamper with what is considered the 'wisdom of the free market'. However, the 'wisdom of the market' or the 'invisible hand' allocate resources and fix relative prices on the basis of supply and demand. 'Demand' stands for purchasing power not 'need'. If we wish to base our economic accounting on some assumption of a hierarchy of needs, then these coefficients become useful. In short, the basic needs approach would yield us a hierarchized set of needs which we can then use to generate weights. These weights would then multiply the sectoral activities to generate the value-weighted GNP. The whole process is described in Table I.

TABLE I
CONSTRUCTION OF A
VALUE-WEIGHTED GNP

	COLUMN A Ordinary GNP in \$ (Price x Quantity)	COLUMN B Value-weighting coefficient	COLUMN C Value-weighted GNP
SECTORS			
1	→	→	
2			
3			
4			
etc.			↓
Aggregation of all sectors	Conventional GNP		Aggregate Value-weighted GNP

First, an ordinary accounting of sectoral activity is made and converted into dollars (Column A). Second, the value-weighting column is constructed using an agreed upon system of need hierarchization. Third, sectoral activity is multiplied by sectoral weights yielding weighted sectoral activity. The summation of weighted sectoral activity is the value weighted GNP.

It is important to note that this system does not prejudge the method of construction of the need-hierarchy column. It may be an ethical need-hierarchy column i.e. giving weights according to what the researcher considers should be the need-hierarchy. It may be a culturally based need-hierarchy, giving weights according to the cultural predilections of the society in question. Thus, wine would have a higher coefficient in France, spaghettis in Italy, bullfights in Spain - or whatever. It may be a specific-purpose need-hierarchy. For instance, in a country that wishes to industrialize, industrial activity will be assigned a higher coefficient than non-industrial, etc.

It must be noted that a further refinement can be introduced by considering the use of zero or negative weights. The standard reference coefficient could be 1. Highly desirable activities could be reflected by a coefficient higher than 1. Zero-sum activities such as an exchange of property, (buying real-estate neither increases nor decreases wealth but it creates activity, which is then measured by the GNP) could be assigned a zero-weight thus cancelling its effect on the GNP. Similarly, undesirable activities, such as war, wanton destruction of property, etc. could be assigned negative weights thus reducing the value-weighted GNP.

The flexibility that could emerge from the systematic use of a value-weighted GNP could be a great help in development-planning since not one but many such value-weighted GNPs could be computed for the same year. One could reflect ecological considerations, another cultural, a third compatibility with the national plan, etc. In essence, we would be assessing crude or 'gross' economic activity by explicit value-judgements introduced as quantitative weights.

The principal problem with the idea of value-weights is to put together a meaningful method of obtaining them. The range of choices here is quite large and a detailed discussion would have to belong to a separate paper. It would be sufficient at this point to note that explicit polling, dialogues, expert-opinion, Delphis or revealed preference could be used to obtain the relevant value weights.

II.2. INDICATORS OF ACCUMULATION

The GNP measure, including its value-weighted version, is in the final analysis a measure of flow or of activity. It says nothing about the level of stock or previous accumulation. Yet, most development processes are largely conditioned by the extent of realised accumulation. In fact, the capitalist system itself has emerged through the process of accumulation. Obviously what is needed is an indicator that will measure the accumulated assets and liabilities of the nation.

The construction of such an index must present problems of immense magnitude and scope but we believe these problems not to be insurmountable. Essentially what would be needed is to classify "assets" in terms of the usual resource categories such as -

- renewable natural resources
 - non-renewable resources
 - inexhaustible natural resources
 - public capital infrastructure
(man-made public goods)
 - private capital infrastructure
 - the nature and quality of the labor-force
 - the stock of technological knowledge
- etc.

The next step would be to find a common denominator to aggregate this stock of productive resources. The usual candidate is money. It is far from an optimum solution but in the absence of clear alternatives the "least worst".

An additional problem is the valuation of long-term assets to account for depreciation, appreciation, etc. Here the same problem arises as in real estate valuation. If a building is supposed to "depreciate" through normal aging then a fifty-year old structure will have little residual value. On the other hand, the steady march of inflation makes a fifty-year old building very valuable indeed. In fact, if the concept of 'replacement-cost' is used then a building will steadily appreciate as the cost of materials and labor increases.

Finally, there is also the problem of quality . An eleventh century Norman castle belongs to the cultural patrimony of Britain and cannot be evaluated in a significant way either by the 'depreciation' or the 'replacement-cost' methods. Both miss the point completely. The depreciation is irrelevant and the replacement-cost infinite.

In spite of these thorny problems even an approximate measure of accumulation/depletion is worthy of consideration. The extent of the accumulation/depletion is a much more meaningful measure of a country's potential than current income. This is certainly the case for an individual and is equally true for a nation. A high-income nation living on its depletable oil-resources like Saudi Arabia may be much more vulnerable than a low-income nation with immense potential (such as China). The accumulation-index should be computed for the society as a whole but an ultimate refinement would include who actually holds the wealth since that fact is of immense importance in development. This could lead to the construction of a distribution-index not just of income, which already exists, but of accumulated wealth, which does not.

II.3 INDICATORS OF ECO-SYSTEM DAMAGE

An additional set of indicators of great importance is the one that monitors the behaviour and the balance of ecological systems. This is a matter for professional ecologists but one economic dimension must be noted: full-cost pricing! The idea here is to reflect in the final price of the product not just the internal costs to the firm but the external environmental costs to society as a whole. To realise this, interdisciplinary teams must assess the direct and indirect consequences of various forms of economic activity in order to identify positive and negative externalities. For example, the extent of pollution and environmental degradation could be assessed by teams of competent ecologists. If the damage is reparable, then it could boil down to a matter of the cost of pollution abatement. This cost could be assigned to the polluter through an externality-tax assessed by the government.² The polluter could either avoid the tax by eliminating the pollution or pay the tax and have the government eliminate it by appropriate measures.

1. See K.Valaskakis, P.S.Sindell, G.Smith, I.Martin, The Conserver Society, N.Y.:Harper and Row, 1979.

2. See K.Valaskakis et al, The Conserver Society.

Full-cost pricing is particularly useful when the threatened damage is either avoidable or reparable. It is an extension of the price-mechanism to include externalities and therefore is subject to the same limitations as the ordinary price-system. If the damage is irreparable then full-cost pricing will not help. Again, if the damage is reparable within a time-period only, then the full-cost pricing idea will work if it is shown that no time-lag will result from it which would steer the system into a disastrous overshoot and collapse cause. For instance, higher prices may not necessarily avoid the premature depletion of non-renewable resources.

II.4 PERFORMANCE INDICATORS FOR PUBLIC BUREAUX

The inadequacy of the price-mechanism as a reliable indicator has already been pointed. This inadequacy strongly reduces the claim that the market is an efficient allocator of resources. The alternative to the market is of course the public sector which has no profit motivation and is supposed to work for the public good. However, the public sector's strength is at the same time its glaring weakness. The basic problem with the "public bureaux" which include both public and para-public organizations is that they, more often than not, lack a performance-indicator.

There are in fact two types of activities in the public sector. The first type includes a genuine easily identifiable output. Examples of this are snow-removal, running the railways on time, the fire department, crime-prevention by the police, etc. Because their output is identifiable, these public bureaux possess acceptable performance indicators which will monitor their behaviour. A fire-department which cannot put out fires or a police department that is incapable of capturing criminals will soon be the object of public scrutiny and the inadequacies will be corrected.

There is however a second type of activity of public bureaux which is the creation, processing and transformation of information. In this category fall education, research, surveys, statistics gathering, etc. Most public bureaucrats in the First, Second and Third World belong to the category of information processors. In recent surveys of First World countries like the U.S. and Canada, the enlarged "Information Sector" accounted for over 50% of the GNP and over 35% of the national labor-force. Within this sector the public bureaucracy accounted for approximately half the information labor-force, the other half comprising the private bureaucracy! In both cases, the output is information. The difference however is that the private bureaucracy is subject to the ultimate discipline of the "bottom-line". The firm must show a surplus or break-even. If it does not, senior management will be changed. A private firm cannot subsist indefinitely on deficits.

1. For details see M.U.Porat, The Information Economy, U.S. Dept. of Commerce 1978 and K.Valaskakis, The Information Society. The Issue and the Choices, GAMMA, Montreal 1979.

Quite on the contrary a public bureau not only has no bottom-line but often thrives on deficits. This is usually the case in those countries where fiscal years are sacrosanct and anything not spent by the magic cut-off date is irretrievably lost. In Canada, the fiscal year ends on March 31st. As the fateful date approaches, the public bureau which possesses surpluses has every incentive in the world to spend them. A surplus penalizes a public bureau because it implies that it has accomplished its aim with less money than expected. The likelihood is that the following year, this public bureau's budget will be cut. To avoid this 'disastrous' outcome, the public bureau will make sure it will spend all its budget. If the budget is in the red, then the bureau will request more funds for the following year.

In order to avoid the squandering use of public funds by the public bureaux, (a source of waste in less developed as well as in developed countries), what is needed is an output-indicator of performance especially in the 'soft' information-related activities. This indicator is not easy to find because the outputs are not easy to evaluate. How, for instance, do you assess the performance of a bureaucrat whose function is to write memoranda to his superiors? By the number of words he writes? Obviously not.

A workable indicator might be based on an emulation of the notion of the private surplus. Senior civil servants should be rewarded not punished for efficient administration of the human and financial resources at their disposal. Just how such a surplus can in fact be made operational in a public bureau is presently unclear and must be thoroughly researched in terms of both its direct and indirect implications. But one thing seems clear: unless an adequate output-based performance indicator is found for the public sector, it will continue to be a source of waste and inefficiency and hamper development. The present indicators are input-based: governments measure their performance by how much they spend not by how much they achieve. This is the root of the problem.

II.5. AN ALTERNATIVE TO THE CONVENTIONAL UNEMPLOYMENT INDICATOR

The most well-known indicator of aggregate economic performance (or lack of performance) is the unemployment rate. This is the measure that appears most often in the daily newspapers. Originally useful, we submit that the unemployment measure is now frequently misleading. There are at least three reasons for this:

(1) Some people who are technically in the ranks of the unemployed are actually engaged in very productive and rewarding occupations. Gershuny has pointed to the growth of an 'informal economy' not mediated by market mechanisms.¹ In this informal non-commercial economy many people are either self-employed or involved in barter-type exchanges within their community. Similarly in Third World countries, the non-commercial traditional sector occupies a great part of the population. The members of the Informal Economy may be technically unemployed but by no means unhappy.

(2) Some wage-earners are actually involved in fictitious jobs and their marginal productivity is zero. Recent studies in the OECD countries have shown that an important proportion of white collar workers have a zero marginal product. One study suggested that if 20% of the white collar workers stayed home, no one would notice their absence and total production would stay constant.

The temptation of most politicians is to buy votes by creating fictitious jobs. These jobs offer little intrinsic reward to the wage-earner and are an excuse to divert productive resources into unproductive occupations.

(3) An increase in unemployment is now frequently the result of technological change which substitutes capital for labor. This substitution is not automatically deleterious to the social good. On the contrary, the freeing of human resources from menial occupations must be welcomed if this imposes no hardship on the displaced person. The State must be the catalyst in the readaptation process which accompanies technological change and the displaced persons must be taught new skills.

¹Gershuny, "The Informal Economy", Futures, April 1978.

As long as the unemployment indicator is used indiscriminately, it will be increasingly misleading and will justify wasteful policies contrary to the notion of development. What is needed is an indicator which will distinguish between "true" unemployment and the statistical variety served so copiously in newspapers. "True unemployment" is a jobless state which imposes grave hardship on the unemployed person who could otherwise be productively employed to serve society. Hidden unemployment may also exist when a person has a fictitious job with zero productivity. Fictitious unemployment is statistical number-crunching which takes no account of motives, of quality of working life or quality of leisure life.

A goal oriented society intent on satisfying basic needs will seek to get the job done rather than create fictitious jobs. To achieve this goal, an indicator is needed to show to what extent the job is being done. Present unemployment indicators do not reveal this kind of information and must therefore be revised.

II.6. INDICATORS OF SUBJECTIVE SATISFACTION

The notion of development was, is and will probably remain hazy and not amenable to easy definition. It is evident that 'development' will mean different things to different people and a precise definition must remain site-specific, culture-specific and time-specific. To reflect this built-in ambivalence, we propose that only the subject himself, (whether the subject be an individual, an ethnic group or a nation) be the ultimate decider of what is and what is not development. We will assume then that, however described, development is the end-product of social pursuits.

To reflect the relativity of the term, we propose that the idea of 'subjective satisfaction' may be substituted for that of development. Whatever in the mind of a people represents improvement, progress, an advance of collective welfare may be viewed as development. Whatever, on the contrary and in spite of so-called objective indicators of wealth, is considered a regression or the status quo cannot be termed 'development'.

This view of development has important implications. First and foremost it emphasizes that it is above all a perception not necessarily an objective reality. Second, it confirms the sovereignty of the people involved in deciding what their social goals are or should be. Third, it is relativistic, in the sense that a series of events for Nation A at a certain time in history may be construed as development, while the same series of events for Nation B, or even for Nation A at a different time in history is perceived otherwise. Fourth and lastly, it places a heavy burden on the social scientist to discover and then measure what it is that people desire or want.

Thus we submit that the ultimate indicator of development is one of collective subjective satisfaction. To arrive at such an indicator, we propose two direct routes, which are deceptively simple (and probably for this reason, open to attack). The first attempts to measure positive satisfaction while the second measures dissatisfaction.

We suggest that the principal method for obtaining a satisfaction-indicator is the direct one of polling either by standard techniques or by more subtle dialogical methods. In the first instance, advances in telecommunication and computer technology make polling relatively easy, at least in the First World. The questions asked must be relativistic in nature. The citizens who are polled should be invited to compare their perception of the present situation with a previous base-year. They could then be asked to make comparative value-judgements as to whether they consider that their nation has progressed or not. The questions could also relate to their individual as opposed to collective satisfaction. The underlying assumption here is that a) people know what they want and b) are willing to talk about it. If that is not the case, then the poll may be misleading. However, even so, there would appear to be little if any theoretical justification for the alternative assumption that the particular social scientist, in his infinite wisdom, knows more about the subjective satisfaction of the individuals polled than they do themselves. Such an assumption is arrogant, elitist and arbitrary. We therefore contend that, if a particular set of people report that they are 'satisfied', that is the ultimate "bottom-line" with which we cannot argue. Conversely, if they perceive themselves as dissatisfied, no amount of listing of so-called objective indicators will automatically change that.

In countries where polling is not part of the culture as it is in the West, more dialogical techniques may be used but with the same object in mind: to discover how the people of a specific culture subjectively view and evaluate their social environment. The dialogues would probably have to be performed on the basis of samples since it is of course impossible to attempt to converse with entire populations.

A variant of the positive-satisfaction indicator is the dissatisfaction-indicator. The logical opposite of satisfaction, perceived dissatisfaction, could be a measure of 'illfare' discomfort or social unhappiness. It is proposed here as an alternative to the satisfaction-indicator on the grounds that, in some cultures, people are more likely to communicate their dissatisfaction than their satisfaction. Complaints seem for good or for ill, a more popular subject for social communication than blessings. Therefore, a 'complaint-function' may be envisioned which would have to be minimized in order for development to take place. Can the subjective satisfaction or dissatisfaction indicators ever be given a quantitative expression? As a cardinal measure we believe not. As an ordinal or comparative measure we believe such quantification to be possible. Taking a base year and assigning to it the index-number 100, we can then ask the relevant citizens group to evaluate their own progress or regression as a percentage of this base-year figure. Since the citizen is himself giving a quantitative measure to the increase or decrease of his satisfaction, it can be perceived as meaningful to him. The indicator is as precise as the citizen's perception but, it might well be asked, who might wish for further precision?

The subjective satisfaction/dissatisfaction index must then be aggregated from the individual's perception to that of society. Such aggregation presents considerable theoretical problems but once again, absolute precision is not particularly desirable in this instance. If for instance, the average perceived change in satisfaction, for whatever reason, of a polled population sample is, say 80% of what it was in the base-year, this statistic is not meaningless. It signifies a certain malaise which must be rectified. Since international comparisons are not attempted, the quantitative measure might yield some significant insight into a nation's self-evaluation.

Whatever its defects, we believe that such an index is still an improvement on so-called 'objective' indicators since, in the final analysis, the source of error, if any, lies with the subject himself not with the 'infinite wisdom' of the social scientist.

III - CONCLUSIONS

This paper has attempted to construct a bridge between the GPID philosophy emphasizing human and social development with reformed and recast economically-based indicators. The case for the construction of this bridge at the level of indicators is simple: it benefits both sides. Economic indicators may now become meaningful rather than misleading and superficial and the GPID philosophy may now be translated into a language, which for good or for ill, is still "spoken" by most decision-makers, development-planners, journalists, concerned citizens, etc. While wholeheartedly supporting the invention of a new language symbolized in the proposed "GPID dictionary", we also believe that this new language be translateable into the old ones. There is no particular advantage in inventing a language which cannot be translated into another. Such an objective is dubious and may even be theoretically impossible.

The thrust of the paper is to outline an area of research in this field of reformed indicators rather than offer a finished product. Much more thought must be given to the implications of the proposed approach. In addition, a feasibility study of each of the proposed indicators must be attempted, especially the major one which is the value-weighted GNP. But the general approach appears reasonable: produce objective and subjective indicators of development goals and process utilising modified existing statistics.

The objective/subjective dichotomy may best be represented by a metaphor. Development is like the sound of good music - a subjective perception created by objective hardware. In the audiophile's search for musical perfection say, through the hi-fi systems, there are objective elements and one ultimately arbitrary one. The objective elements include the quality of the amplifier, the speakers and the ambient acoustic space which constitutes the "hardware." The "software" will include the signal itself which is the recorded music. But all this hardware and software must produce a subjective effect in the mind of the listener that is perceived by him as pleasurable. No amount of electronic wizardry will replace that subjective pleasure. But the hardware and software can contribute to it.

Development then is like the pleasurable sensation of good music. It is subjective satisfaction which either exists or does not. It is measured by the last indicator proposed in this paper. The first five, on the other hand, are objective indicators measuring the hardware and the software which could be instrumental in producing the "good music".

It is these five which can best be put together by modifying and re-structuring existing economically-based indicators not to the exclusion of other approaches but in order to translate the richness of the GPID in a language that is meaningful to decision-makers, bureaucrats and the general public.

BIBLIOGRAPHY

27

- Freedman, Robert. 1961. Marx on Economics. London: Penguin.
- Galtung, J. "Goals, Processes and Indicators of Food, Health and Energy Development," GPID, Geneva.
- . 1979. "Goals, Processes and Indicators of Energy Development," GPID, Geneva, September.
- Gershuny, J. 1978. "The Informal Economy" in Futures, April.
- Irvine, John, Miles, Ian and Evans, Jeff. 1979. Demystifying Social Statistics. London: Pluto Press.
- Morse, Chandler. 1954. Basic Concepts of Private and Social Accounting. Valley Offset Inc., New York.
- Oppacher, F. 1976. "The Quality of Life and the Conserver Society" in the GAMMA Report on The Conserver Society, vol. IV (GAMMA-Montreal).
- Porat, M.U. 1978. The Information Economy. Washington US Department of Commerce.
- Rao, M.V.S., Porwit, K., Baster, N. 1978. "Indicators of Human and Social Development," Report on the State of the Art. Tokyo: UN University.
- Ruggles, R. and Ruggles, N. 1976. National Income and Product Accounts. New York: McGraw Hill.
- Smith, J.G. 1976. "The State, the Market and the Conserver Society" in the GAMMA Report on the Conserver Society, vol. III (GAMMA-Montreal).
- Valaskakis, K. 1979. The Information Society, the Issue and the Choices. Montreal, Canada.
- Valaskakis, K., Sindell, P.S., Smith, J.G. and Martin, I. 1979. The Conserver Society. New York: Harper and Row.
- Wiley, Leonard. 1975. Economics and Society. New York: Wiley.