PROBLEMS ENCOUNTERED IN THE DEVELOPMENT OF A RELEVANT SOCIAL ACCOUNTING FRAMEWORK*

by:

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This paper, in presenting a critique of the SAM framework with a view to indicate the direction of its future development as a data system, should not be construed in any sense as a criticism of those who have exerted such monumental efforts in producing these statistical formats. The paper is primarily concerned with elaborating the limitations and qualifications – many of which have already been identified or implicitly recognized by those collating the data – of the basic SAM system and to accord them more than the passing reference that has been possible to date. I am particularly grateful to Alan Roe, Jeff Round and Dick Allen for comments on an earlier SAM paper presented at the ODA.

Introduction: *Scope of the Problem*

On the basis of experience primarily in compiling rather than using a social accounting matrix (SAM) this paper sets out to make essentially two criticisms of the SAM system. The first relates to the broad framework itself and to its accompanying conventional statistical classifications that (of necessity) have been used in this approach so far. The second draws attention to the limitations of the use of monetary measures alone – particularly with respect to the distributional pattern of total available household income – to evaluate progress and the effectiveness of development policy. The need is evident to supplement the basic financial flows with other forms of measures and indicators of socio-economic progress relating to such important determining factors of general well-being as the distribution of wealth (particularly of investment assets), education,

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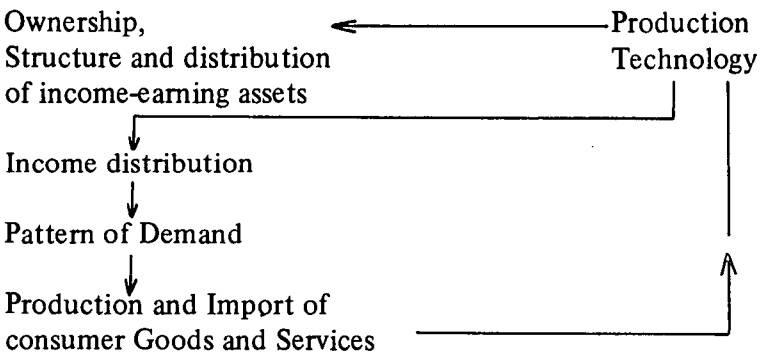
employment and skilled manpower; access to amenities and services; delivery systems, opportunities, etc. This critique is founded, therefore, not so much on what are serious professional reservations about the magnitude and type of judicious statistical manipulations that SAM compilers are invariably forced to carry out in these exercises (and which, in the past, have tended to be dismissed in rather too summary a fashion by both survey statisticians and SAM producers alike – see Pyatt, et al (1976) but on an increasing dissatisfaction with the capacity of any current SAM framework to *explain* the underlying causes of an existing maldistribution of income and the continued widespread prevalence of poverty.

The SAM approach aroused interest and achieved its initial popularity simply because it purported to go further than the conventional UN System of National Accounts (SNA) in providing disaggregated details about the pattern of allocation of income and expenditure as well as transfers by different household groups and institutions. But the system, at best, only describes and monitors the changes that occur and, unfortunately, its dynamic properties give misleading impressions of causality. They rarely reflect, with existing definitions, the true fundamental forces at work and their various socio-economic inter-relationships which actually determine the institutional distribution of income.

2. *The Underlying Assumption of Income Determination Size Distribution*

This paper therefore attempts to define an appropriate path towards which further data and model development should be directed to enhance the usefulness of the SAM system as an operational macro-economic framework. It implicity accepts that the pioneering efforts and progress made so far in countries such as the Philippines – using predominantly their own resources – have been eminently worthwhile, but it suggests that the position has now been reached where the basic constraints imposed upon the model by the adoption of existing conventional definitions and classifications and monetary measures can no longer be accepted and that these must be adjusted and altered so as to better reflect the real structure and economic organization of developing countries.

In a highly simplified diagrammatic way, the underlying reason for dissatisfaction with the present SAM framework rests on the assumption that the following thesis of economic influence and inter-action applied to most developing countries:



If it is accepted that, in the distribution of wealth, it is the top quartile group of households that owns the bulk of income earning assets in country and that it is principally from this group that the main force of purchasing power originates, then it is also this group of households which determines both directly – and by default – the structure of domestic production in the economy. Insofar as these demands also reflect international or foreign patterns of consumption expenditure, the production structure will be dominated by current international technologies and capital use. These will have a strong bearing on the relative allocation of factor income flows to capital and labour. When defining the characteristics of the economic model associated with the SAM statistical framework other factors that could be taken into account in explaining the distribution of income in the modern tradeable and non-tradeable sector of the economy are the degree of monopoly power and bargaining/conflict theory.

What happens in practice in many developing countries is that – although there are usually many sectors and operations where the value added relative to basic input cost and capital use in high and labour is the main factor of production – the actual total value added is so low that such labour intensive activities tend to remain

small scale and the associated factors payments are minimal. Because a large share of such incomes is of necessity allocated to (mainly unprocessed) food and shelter, the realised demand of this section of the community for domestically manufactured goods is either non-existent or only marginal and many low income earners' basic needs remain unsatisfied. The key to policy, therefore, seems to lie in obtaining answers to such issues as how much productive capital to reallocate (and to which sectors) and what type of technology should be introduced to provide both the goods needed and the corresponding incomes to satisfy basic human requirements. It is no good governments advocating a basic needs, poverty alleviation and redistribution strategy unless they are prepared to construct an appropriate descriptive quantitative framework that enables them to formulate and implement the correct official policies to ameliorate and eventually eradicate the fundamental problem.

3. *Conceptual, Classification and Data Limitations*

Data which simply indicate the existence of a social or economic problem (such as in the case of a well-known social thermometer like a poverty line) merely present a partial descriptive view and they are of only limited value in attempts to provide any proper diagnosis of the basic and often chronic malady to be cured. It is only by the objective evaluation of respective magnitudes and the effective and reliable monitoring of real changes that policy-makers can assess the efficacy of their official decisions and programmes. But care must be taken that such procedural choices, justifiably made in the well founded pursuit of more integrated and co-ordinated data systems, should not lead to the assumption and predetermination of certain inter-relationships as has characterized past debates about growth and development or life expectancy and health. A fundamental conflict exists, however, because a system of national accounts such as the SNA that puts production activities at its centre is inadequate for poverty and distribution-oriented strategies and, in the same way, another system like the SAM which puts distributional aspects-and therefore the household sector – at the centre of focus is inappropriate for growth-oriented strategies,

unless a system can be devised which links the level of technology to income flows and employment. In principle, what is needed is a statistical framework which illustrates the labour/capital/import content of household or individual consumption expenditures at different levels of living so that governments can ascertain what groups consume the 'embodied labour' of other groups working within the system. This statistical tableau must permit policy-makers to study the mechanical effects of changes in income levels as well as changes in income distribution on consumer demand and hence on the production structure itself.

Like any other summary format, the SAM system reflects the basic definitions and classifications that have been used and the way the raw data have been collected and compiled. The grouping of statistical units having one or more characteristics in common (looked at from perhaps alternative viewpoints and hypotheses) thus assumes critical significance because its features – and the implicit perception of reality it thus portrays – play a fundamental role in determining the characteristics of the inquiry and the type of analysis possible. Simply linking related but separate disaggregated data sets in the absence of any related social dimension does very little either to improve the information base on which welfare policies can be formulated or to enhance the government's knowledge of the operational structure of the economic system.

4. *The Nature of a Social Accounting Matrix*

There are, in essense, three separate aspects to a social accounting system: – the statistical system and its data, an analytical framework (which determines how that data will be compiled, classified, and consolidated according to given definitions, guidelines and recommendations) and a conceptual model which defines how the different variables identified interact with each other. Clearly, all three components are intimately inter-linked with each other and it is impossible to isolate or divorce the assumed behavioural aspects of the system from the fundamental definitional concepts employed. However differently the underlying conceptual model is formulated, its ability to explain the operational characteristics of the economy it

is attempting to describe will be basically constrained by the specific definitions and classifications chosen as well as by conventional estimation procedures and data collection methods adopted. When the meaning and coverage of commonly accepted economic concepts such as production, income, employment, consumption, investment, etc. are subject to some criticism and varied interpretation in developing countries, their continued uncritical use in a decision-based information system must be reviewed and the current conventional methods of defining and disaggregating these components seriously questioned. Furthermore, the data reflect the peculiar and specific legal, institutional and administrative features of the country and the sample survey procedures used to generate the basic statistical records and so the type and scope of analysis that can be undertaken *particularly in the area of distribution policy,* is constrained and, in some respects, pre-determined. Conventional data systems, preoccupied with aggregate growth and average living standards, still tend to focus on the importance of the standard (commodity based) industrial sectoring as opposed to a technology based production structure in defining the output of the economy.

The causality which lies behind the observed differences in living standards must lead policy analysts to question the standard accepted commodity basis for the disaggregation of production activities in the system because it is this which determines the economic environment within which living standards are established. Existing conventional classifications such as the ISIC do not consider in any way the distribution of value added to different groups within each production sector (i.e. between skilled and unskilled labour, between capital and labour, etc.) nor do they take account of the type of technology employed within that sector and its respective employment characteristics. Certain changes, perhaps at the basic coding stage, will be required in this area before any major progress can be made.

In early working this area, some analysis was undertaken as to how a change in income distribution influenced consumer demand and hence the structure of production. But it did not go on further to consider how the actual production structure itself influenced factor payments and hence the consequent income distribution. In

one of the first case studies attempted, in Iran, some of the production sectors were chosen using a wider set of criteria than simply deciding on the basis of the homogeneity or similarity of their principal products. Similar changes have been incorporated into the most recent Fiji SAM table. In both these two particular cases, the level of technology (viz. modern versus traditional manufacturing) and ownership (viz. resident versus non-resident sectors) were also taken into account.

5. *Empirical Evidence of Problems*

The main objective of SAM projects so far undertaken has been to develop a set of accounts that do not centre primarily on the basic industrial structure and commodity balances. They have been designed essentially to focus on the living standards of different socio-economic groups and to show how these are linked to the given institutional structure with its associated pattern of transfers and factor income distribution. Classification systems, however, are normally predetermined by the characteristics of the administrative organization and its associated institutional framework. This also affects the nature of any sample survey exercise and the type of data themselves. Classification involves a consolidation of information and this is invariably accompanied by some loss of detail. The question which must then inevitably arise is: "what particular details can any specific enquiry or data system afford to lose?' Such questions can only be answered effectively and appropriately in relation to the matter or problem under investigation. So, although, in practice, commonly accepted international standards and conventions may be the easiest and the most convenient way to organize and treat the mass of, for the most part, unordered data collected in any survey or regular administrative exercise, they may not always be the most relevant and correct one. Considerable distortions have been incorporated into the results of some surveys, particularly those concerned with identifying patterns of income distribution, by the absence of comprehensive lists and varying rates and types of non-response over time combined with other measures taken at each stage to eliminate the resulting distortions affecting the final data.

The experience of most SAM studies, seems to indicate that it is the data requirements rather than the model itself that present the main obstacles to gaining further progress with the implementation of planning; techniques which embrace employment and distribution questions. But the main constraint lies primarily in the definitions and classifications used within the structure of the SAM as compiled with existing statistical material.

An important function of a SAM is that it provides a basis for formulating alternative development policies and for making projections. It needs to be concerned with the possible structure of a future economy as well as with the initial position which it is attempting to describe. But economic planning in developing countries should be largely about structural change and, fundamentally, the framework does not provide the basis either for identifying the need for structural shifts or for analysing basic institutional changes in the economy. It only facilitates projections of the existing status quo and it tends to beg the more important distributional questions.

The significance that must be attached to choosing the appropriate basis classifications – in particular in relation to production activities – cannot be over-stressed and it has not escaped the attention of the SAM compilers, but the issue has been largely neglected because of the unavailability of adequate and relevant micro-data sets. The modern-traditional dualism in production techniques in developing countries has long been recognized as important in development policy. The vintage and type of technology – labour or capital intensive, domestic or imported – employed in the production of goods and services is also of fundamental importance. If the concern of governments is primarily with development planning and structural change (and particularly with respect to improving the distribution of factor incomes) then it is necessary that the real technological dimension of production units is incorporated into the SAM framework. Simply ensuring numerical consistency is not in itself enough to provide the integrated picture of interdependence either between or within the different socio-economic dimensions that exist.

The development of SAMs in recent years seems to have leant more towards the theoretical modelling aspects than the immediate practical issues. Their increasing sophistication has meant that a greater emphasis has been placed on the strict accounting, methodological and computational aspects of the model rather than on the social and potential explanatory aspects of the matrix. Thus, although a number of SAM exercises have been undertaken in developing countries, the stress has been upon the articulation, specification comprehensiveness and other essentially 'technical' elements of the SAM. On the theoretical side, the need to close the system, to try and make more variables traditionally regarded as exogenous (such as prices, investment, vexports, etc.) endogenous to the model, the desire to introduce non-linearity and to remove the rigidities imposed by assumptions of fixed coefficients, the moves to facilitate computerisation of the model and automatic error adjustments beyond the simple RAS process, the drive to improve comprehensiveness and ensure better data estimation, etc. have all been dominant.

6. *Perceived Problems*

6.1 *The structure of socio-economic institutions*

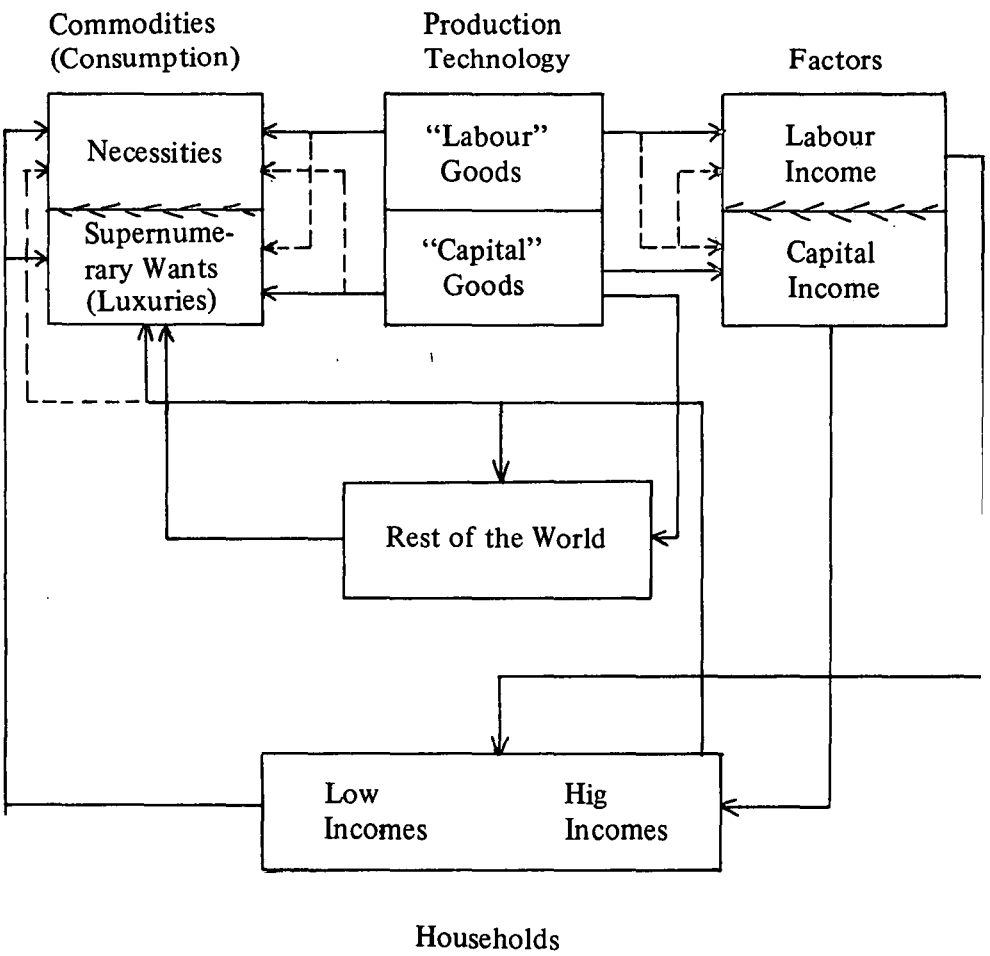
Relevant societal frameworks need to be developed for each country which better reflect real social class differences (rather than continuing to rely on misleading income groupings or some other proxy variable), as well as institutional behaviour and the social relationships in production. Such categories have to be combined with the techniques and level of technology applied in the productive process. The most appropriate framework to demonstrate the completion of the full circuit between the consumption of goods and services, actual household expenditures on commodities by different social groups, the production of different commodities by alternative processes and technologies and the resulting income distribution to factors of production and individual household units – which is so fundamental to the satisfaction of consumption needs and the acquisition of various commodities by different income groups – has yet to be satisfactorily defined and determined in the model.

6.2 *The Structure of demand*

The principal problem lies in the need to identify the basic "household commodity needs (or actual 'purchases' in practice) – commodity production – appropriate income generation and distribution" link. The situation emerges into clearer focus if a partial rather then comprehensive macro-economic view is taken and attention is concentrated on policies designed to meet basic needs and eradicate poverty. The distribution of factor incomes to institutions, particularly households, has to be more clearly defined from the *payments* – or originating donor source – as well as the *receipts* point of view, i.e., the type of production that generates incomes for low income earners must be identified. At the same time, the type of production (and imports) which satisfies low income households' basic commodity requirements must also be identified. In some cases, this may give rise to conflicts that can only be resolved by developing a far more extensive framework. In practice, therefore, apart from the basic desirability (for both technical and practical reasons) of distinguishing in the output sector between production activities and actual commodities or 'absorption' and 'make' activities (since the one-for-one relationship cannot be assumed between the two) there is an equally essential need to classify by level of technology, i.e. between labour intensive and capital intensive techniques of production. Unless this is done there may be no way that policy-makers will be able to trace whether production is being generated in those activities that provide incomes for those most in need. (See diagram below)

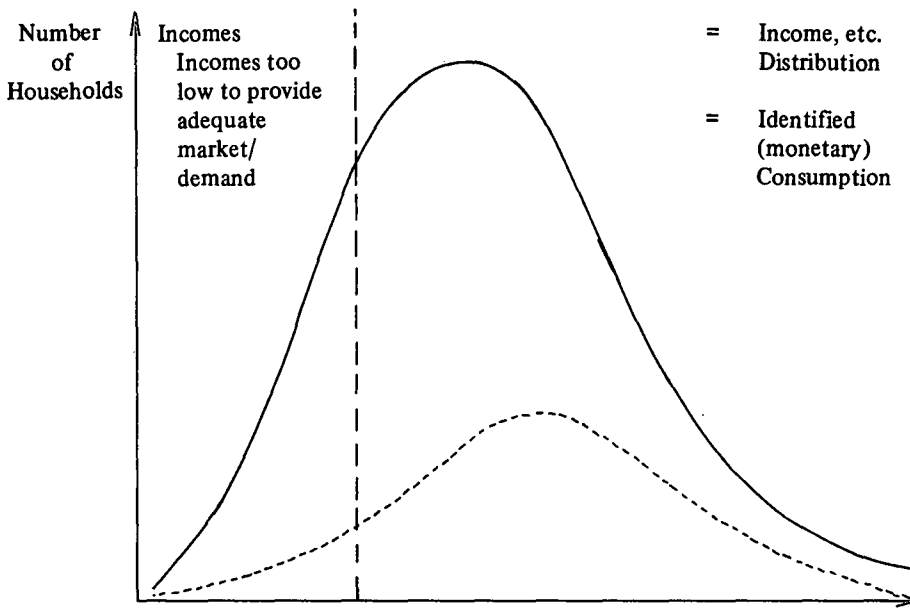
Even when total commodity consumption is identified by different institutional groups, the resulting demand pattern is still normally defined in single rows and the corresponding output of goods and services must then be assumed to be allocated pro-rata to those various institutional groups within any mechanistic computing system. The true situation in practice is likely to be quite different since production activities respond to specific types of demand, i.e. most goods and services in developing countries (other than small scale rural production activities) are produced mainly to satisfy the demands of middle and higher level income groups. The poor –

unless they are regularly employed in (say, labour intensive) productive activities – possess little power to command those goods and services produced by domestic economic enterprise or those supplied as imports. To ensure that low income earners receive a sufficient income and hence buying power to enable them to satisfy their basic needs it is necessary for policy-makers to know in which



production sectors such incomes are most likely to be generated. An example is given below to illustrate this point; it shows why what may be considered as "lower social priority" consumer products would be regarded as more desirable than "basic needs" commodities if only a market sales view is taken.

Income/Wealth/Land – Holding, etc.



Income, etc. and Consumption satisfied by Domestic Output of Manufacturing Sector

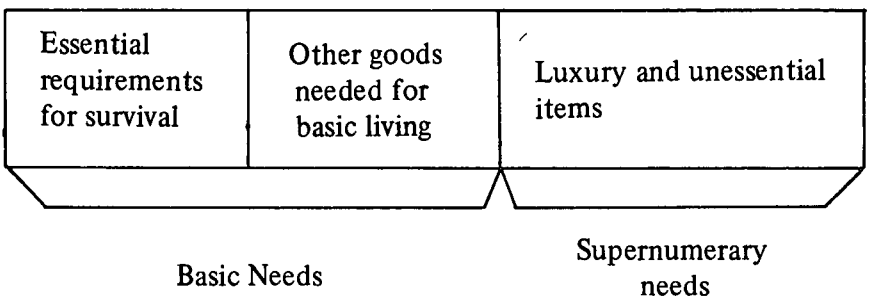
VALUE OF PRODUCTIVE ACTIVITY ($)

		COMMODITY									
		RICE		*BREAD*		*SOAP*		*CANNED BEER*		*MOTOR CAR*	
Population	*Social (Income)*	*(Price per kilo $0.10)*		*(Price per piece $0.20)*		*(Price per piece $0.05)*		*(Per can $0.50)*		*Each ($4000)*	
		Quantity	*Value ($)*	*Quantity*	*Value ($)*	*Quantity*	*Value ($)*	*Quantity*	*Value ($)*	*Quantity*	*Value ($)*
1,000,000	Low	1,000,000	100,000	1,000,000	200,000	500,000	25,000	100,000	50,000	–	–
100,000	Middle	75,000	7,500	50,000	10,000	100,000	5,000	100,00	50,000	50	200,000
1,000	High	500	50	1,500	300	2,000	100	2,000	1,000	1,000	4,000,000
1,101,000	Totals	1,075,500	107,550	1,051,500	210,300	602,000	30,100	202,000	101,000	1,050	4,200,000
Base of Production operations		Rural		Urban/ Rural		Urban		Urban		Urban	
Type of Technology		Labour (Unskilled) Intensive		Labour (Unskilled) Intensive		Mixed (Skilled & Unskilled Labour)		Capital Intensive		Capital Intensive (Skilled Labour)	

Note: Assuming the above, hypothetical purchasing patterns.

6.3 *The Problem of Commodities*

The priorities may not therefore be to obtain greater detail and comprehensiveness but to ensure there is a more relevant selection of important elements and to see these are carefully identified. For example, if commodities are retained as a basic classification they might be – at the first level – categorized in the following way, along much the same sort of lines as originally proposed.[1]



The problem is that most commodities – even very basic ones like bread, rice, tea, etc – fulfill varying degrees of need, some proportion of which is essential for 'basic'[2] and another supernumerary and perhaps even marginal.[3] So, in a satellite table or sub-matrix, some separation may be necessary for certain commodities normally regarded as basic whilst other less essential goods and services can be effectively amalgamated into just a few major groups such as "all other manufactured articles", "business, professional and personal services", etc.[4] Then each of these newly

[1] Pyatt and Thorbecke 1976.

[2] There are, of course, no basic goods and services, simply basic needs (which can be satisfied by different goods and services)

[3] A cup of tea brewed by a part time labourer at home on an open fire first thing in the morning before work is very different (in terms of the needs satisfied) to the formal served afternoon tea taken by the person of leisure on the terrace of a luxury hotel.

[4] Although some luxury services supplied to high income groups in developing countries as well as export products are very labour intensive.

defined "end-use" categories of commodities can also be distinguished as to whether they are produced mainly by labour (and type of labour) services or by capital. Ideally, each listed or known enterprise should be separately classified not only by the type and scale of technology employed but also according to the type of demand and markets served through the production and sale of its output of goods and services. Perhaps one way of applying this empirically is to reintroduce the traditional notion of "wage goods" and to define commodities both according to their labour input component as well as by the type of purchaser. This can already be done in the case of imported consumption goods.

6.4 *The Process of Distribution and Transfer*

Although it is now widely accepted that data showing the ways in which incomes are distributed and subsequently redistributed through transfers are of vital interest from a policy viewpoint, it should also be recognized that the actual redistribution process raises complex and sensitive issues which in themselves can be neither precisely identified nor quantified because many are of a political or ideological nature. Most detailed national macrostatistical studies can only describe part of the distributive process – what is, in effect, only a partial outward manifestation of the basic mechanism. As yet, they do not permit any detailed analysis to be undertaken of the underlying behavioural characteristics thought to exist between different variables. Nor can they show the structural and institutional implications of policies designed to alter the existing fundamental pattern of distribution of incomes or what transpires under the cloak of concealment.

Policy-makers must seek a much better understanding of the relationship between distributional inequality and the various inherent structural factors that exist not only on the national front but also at the local level for it is these that have given rise to the observed imbalances in the economy.[5] Several different types of causal relationship are involved and their respective relative roles in

[5]Wolf Scott, 1978.

generating inequality need to be evaluated, if only in the interests of a typology of inequality for further investigation. The distributional equality within an economy may be affected by a large number of different factors which have not so far been *fully* incorporated within the SAM framework:[6]

1. The structure of property ownership and the control that different groups can exercise over the means of production.
2. The various levels of technology employed in the process of producing commodities.
3. The total structure of production: the relative shares of agriculture (and of different kinds of agriculture), industry, commerce and services.
4. The respective use made by each sector of imported or locally produced inputs and factors by type.
5. Internal inequality within each sector identified and the consequential heavily skewed nature of associated flow patterns.
6. The official state system of distribution and redistribution (through, for example, government purchasing policies, subsidies, direct and indirect taxes, price and wage controls, transfers to different groups in the community) which, whilst revealing actual monetary transfers, normally fails to reflect any hidden informal benefits and privileges.
7. Eligibility and access to State amenities and facilities.
8. The population composition, e.g. the relative percentage of the population in households of different sizes, in different age groups, their different racial and sexual composition, as between rural and urban localities or other regional categories considered to be significant.
9. The spatial geological or ecological structure of the country.
10. The impact of education on different groups in the community.

[6]McGranahan, 1979.

6. *The Problem of Defining and Identifying Incomes*

The difficulties of defining different incomes and their distribution is especially great where developing countries are concerned partly because of the specific practical and theoretical problems involved in implementing appropriate imputation procedures for production and consumption in kind. Price variations, and even more sweeping assumptions about the nature of incomes accruing from the ownership of various assets (particularly housing), raise very serious problems in trying first to discern and then assess appropriate income levels, especially when the results are designed to throw light on the distribution of levels of living in the whole community.[7] This inevitably means that more attention should be paid to studies in developing which cover such diverse areas of activity as the ownership of possessions, material living standards and the availability (as well as access to) public facilities and services. The use of abstract income distribution indices relating only to cash employment emoluments and direct tax payments may not only conceal the real nature and causes of the existing maldistribution and poverty but may also bias policy analysis in the direction of income support solutions (which act only as palliatives) when quite different problems exist (e.g. seasonal food shortages) and usually more fundamental structural and institutional remedies are called for.

However much care is taken to emphasize the pedagogic and explanatory aspects of these models, it is inevitable that – even as a purely descriptive device – the framework will suggest themes which are only consistent with certain economic models. This is partly because the institutional sector of the system can only be defined by the institutions which already exist and these are subject to change, particularly in developing countries (e.g. when any of the "commanding heights" of the production sector are taken over by the State). It is therefore difficult to move towards more appropriate social classifications (which are urgently required

[7]See the UN Provisional Guidelines on Statistics of the Distribution of Income, Consumption and Accumulation of Households Series M. No. 61, New York, 1977 for a detailed description of the problems of measuring income.

and should be adopted in the modelling) when the institutions which give rise to the social inter-relationships described are themselves fixed and, if not given, then effectively predetermined. The explanatory power of the model is therefore limited both by the availability of appropriate data and by the formal, conventional definitions and classifications adopted.

7. *Limitation of the SAM Framework*

Particularly from the point of view of analysing policies to improve the existing distribution of income and to provide adequate quantities of those commodities regarded as basic needs for deprived groups there appear to be four main problems with using the SAM.[8]: –

1. It only provides a satisfactory basis for examining how the *existing* distribution of income arises from the *existing* structure of production. It assumes (but says little about) the present technology of established industries which generates the particular pattern of factor payments and structure of taxation observed.
2. In addition, none of the data frameworks compiled to date says anything about the associated pattern of ownership of assets (or wealth) or the organization of production as, for example, between small and large units, diversified or concentrated activities, etc. What little evidence exists in developing countries seems to indicate that the ownership of factors of different types cannot be regarded as being proportional to the incomes derived from these factors because such influences as power, social relationships, etc. play such an important role. (The links between the power structure and the ownership of cattle in Botswana is an interesting case in point.) Perhaps surprisingly, the pre-tax distribution of incomes does not appear to be as highly skewed as the distribution of wealth in most developing countries.

[8]Roe, 1979.

3. The institutional categories identified in the SAM need to be those for which there is some fundamental case for making a redistribution and not those that are perhaps already identified in the system.
4. The structure of the SAM is compromised both by the inadequacy of the classifications normally found in the primary data and by a certain incompatibility of policies that emphasize inequality reduction with those which wish to direct attention to specific target groups. In other words, income groups cross social boundaries and it is difficult and frequently misleading – especially in rural based economies – to use income ranges as a method of identifying specific social classes. Indeed, the measure of income itself may be relatively meaningless or at the worst positively misleading, particularly if it relates to households or, worse still, household dwelling units.[9]
5. The SAM only seems to provide a basis for helping to identify those groups for which policy can be devised to relieve or alleviate poverty and ensure adequate basic needs. It may merely assist policy-makers to initiate policies that supply palliatives and not suggest basic remedies. A SAM can provide only very little guidance to those governments which wish to introduce new strategies to change the whole basic pattern of income distribution and final demand. The problem is aggravated by the tendency for the SAM frameworks to adopt a classification for the division of households that is based on income levels – a subdivision which is sustained mainly because of the lack or unavailability of less weak alternative primary data – and this tells policy-makers really very little about the fundamental structural problems affecting the economy. Different households at all levels of income are likely to have disparate characteristics (some may only be single person households) and so

[9]McGranahan, 1979.

they may not be affected equally and predictably by a certain policy intervention. It certainly does not seem clear whether, when devising a poverty relief programme or a basic needs strategy, existing definitions of the income distribution can be very helpful.[10] Apparently straightforward classifications of households, frequently encountered in existing surveys, provide some guidance as to the pattern of income inequality but they rarely provide the basis for any fundamental analysis of poverty and basic needs issues, not least because the problem of deprivation has many dimensions and the question cannot be easily perceived by classifying households in only one or two ways. Few of the classifications permissible can provide any information about a household's access to those amenities and commodities which could help to satisfy their basic needs. It has been suggested that the best that can be done is to identify the two or three socio-economic characteristics of households which best differentiate those in poverty from those who are not and, at the same time, provide a satisfactory basis for implementing policy changes. Principal components analysis help in defining relevant groupings.

8. *Physical Flows and Indicators: Satellite Tables*

In principle, the usefulness of the SAM can be extended by identifying the links between the financial flows identified and the appropriate physical flows to which they relate, e.g. as in the case of government expenditures and the numbers receiving improved education or health or housing. These would be numerically identifiable outside the system.[12] Clearly, too, the SAM can be extended by using different replaceable 'modules' which can be substituted with suitable adjustments, elsewhere, with other subma-

[10] McGranahan, 1979.
[11] Roe, 1979
[12] A good example is the Food Accounting Matrix (SAM). See Roger Hay, 1980.

trices of the table. For example, this could prove particularly useful in the case of different types of production activity.

It would also be perfectly feasible to identity total production according to whether it is generated by mainly large-scale or small-scale establishments, by traditional or modern technology, by type of input structure (i.e. as to whether the inputs used are primarily imported or domestically produced) or perhaps according to whether the establishment (or enterprise) is foreign or locally owned.[13] Each of these modules would be appropriate and useful for particular types of policy analysis and there is less danger that the statistical system and the overall framework would be tied into any specific and possibly inappropriate conceptual model. Rather than adopting what might appear to be an inflexible approach, this would have the appeal of making it possible to identify additional inter-dependencies in the system. The likely implications for other aspects production and distribution resulting from the pursuit of specific policies can also be assessed. At the same time it may help to coordinate data collection efforts and to avoid unnecessary duplication because the system would inherently contain a number of internal checks arising simply from the fact that the same aggregate was being looked at from several different angles.

9. *Adjustments: Needed to the SAM System*

What does all this entail for future data collection and compilation? In principle, most of the following elements:

1. More prior social, political and institutional analysis to avoid unnecessary groupings (e.g. to decide at the outset what are the key political issues and social priorities of official policy).
2. More 'grass-roots' micro-data evaluation and redefinition before grouping and consolidating them into given classifications.
3. The use of different classifications, more pre-classification and less post-tabulation editing (to avoid

the need to "massage" the data into more relevant compartments).[14]

4. The subjective pre-listing of both enterprises (or establishments if the information is available) to achieve greater homogeneity with respect to labour-capital and material and/or import use. This is to ensure that appropriate size scale and production technology operations are identified.
5. The classification of commodities according to some scale or order of need satisfaction.
6. The collection of supplementary statistics on asset holdings as well as on other such matters of social significance which at present lie outside the system, e.g. relating to education and health.
7. The linking of physical data and wealth statistics in satellite tables to the monetary flow data in the SAM.
8. The separation of production/industry activities from commodity outputs (or purchases) and their use in both computational and classification reasons.
9. The compilation of supplementary tables on institutional purchases of imported commodities.
10. The assignment of relevant real numbers – relating to, say, employment, skill levels, broad occupational categories, types of operation etc. – to the different individuals, households and other institutions defined in the framework.[15]
11. The time input of different labour activities.[16] The social accounting matrix is, in the first instance, primarily a systematic and consistent data classification system coherently linked to an acknowledged analytical frame-

[14]And post-survey stratification of pre-conceived problems and issues.

[15]Generally it will not be possible to do all these things at once: hence the need for alternative views of same data.

[16]The fundamental socio-economic institutional characteristics of system that equates, in many terms the value of 1 hour's work of a University lecturer to 20 hours work by a farm labourer may also need to be examined or at least taken into account in an employment creation strategy.

work. Much further painstaking effort is still needed not only to formulate the model but also to quantify it and calibrate its performance. Although similar statistical frameworks have been introduced in a number of developing countries (often under the direct initiative of the same small group of people) it remains doubtful whether, at this stage, many low income countries can afford to maintain such a system on their own. But since the question of living standards and their determination within the context of a policy focussed macro-economic model is central to this exercise, it must be hoped that international agencies and aid donor countries will give their continued support to such studies and further research to see that they are developed in meaningful ways. In producing a valuable guide for practitioners and indicating – if only implicitly the economic and political difficulties of achieving a development path combining growth and poverty alleviation, SAM frameworks have rendered an important service to the technique of development planning. Two important questions nevertheless remain to be answered: can any system that primarily utilises financial data be used to evaluate effectively the impact of social policies whose outcomes can really be measured only in physical terms? The appropriate lead may well be found in the association of related manpower data and other social statistics like health and education with the income levels and social categories specified in the model in peripheral or "satellite" tables. But, as a concluding thought, can any model and a data framework based on an existing social structure really say anything about future societal change?

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