

**INVESTMENT, SEN'S CAPABILITIES APPROACH, REGIONAL DEVELOPMENT
AND POVERTY REDUCTION**

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Abstract

The importance of investment in local and regional development has been underlined by many studies. However, a comprehensive framework for linking the local, national and international levels of analysis with the promotion of human capabilities is often absent. This paper presents such an approach and offers a way to organize the data and the linkages through the construction of a local and regional social accounting matrix. The central message of the present methodological approach is that it is possible to operationalize Sen's capabilities approach for investment policy analysis at the micro-level while maintaining the micro-macro linkage in a globalized economic setting. It is argued that by following this approach, poverty reduction along with capabilities enhancement of all households will lead to an increase in overall productivity as well.

I. THE GOAL OF REGIONAL AND LOCAL DEVELOPMENT^{1/}

All development is self-development. This is true for at least two reasons. First, all development is the development of self or individuality at the end. Second, such a development must take place through the initiatives of the people for whom development is undertaken. Thus, a qualitative leap is necessary in distinguishing between development that leads to the flourishing of appropriate functionings and capabilities^{2/} and just quantitative growth. In this paper, I develop an approach to local and regional self-development by relying on the ideas of rights and capabilities of individuals in local communities. I argue that such an approach to development at the local and regional level requires a new type of information base and a different type of grass-roots training. This approach, if adopted, could make the transition dynamics of the transitional countries quite different at the local and regional levels.

My approach overlaps considerably with the approach to local social development advocated by Jones and Yogo (1994) at the United Nations. In both the approaches, social capability of the individuals in small communities becomes the focus of attention. It is possible to see in this convergence something of fundamental importance in terms of human development. This common factor is none other than the value of human beings as agents of action. Human development must enable people to see themselves as social agents, as centres of their own initiatives capable of transforming their own environment. Therefore, resources enhancing their agency and the constraints on agency both become important factors in development from this perspective. Using a particular formulation of Sen's capabilities within a formal and quantifiable framework approach allows us to refine and operationalize these ideas with considerable depth and detail.

One particular strength of the methodological approach advocated here is that the effects of

investment in both physical infrastructure and human resource development can be integrated within a single framework. Thus infrastructure building and accumulation of other forms of physical capital can be brought together with the capabilities of people in order to find out the precise effects of projects on both productivity and well-being of people. In this unified framework, poverty reduction, for example, is no longer an isolated exercise carried out by development bureaucrats, but is integrated with enhancing the productive capacity building and local initiatives. Ultimately, this approach allows us to see all human beings as potentially productive and creative people who can contribute meaningfully to society. In this integrated framework, then, social, economic and individual development are concurrent and mutually reinforcing. The goal of local and regional development is to create this kind of virtuous circle at the local and regional levels.

II. HUMAN DEVELOPMENT AND CAPABILITIES AT THE REGIONAL AND LOCAL LEVEL

Following Sen's pioneering efforts development can be viewed as a process of not just raising incomes (although this may be an important objective) but of increasing the capabilities of people. I have argued elsewhere^{3/} for conceptualizing the capabilities as fully social. This means, among other things, that capabilities must be grounded in a concrete set of social, economic, and political institutions both at the global and at the local levels.

Since the focus of this paper is to offer ways of thinking about development at the local level, it is necessary to ask: What kind of local institutions are necessary to enhance the freedom of people to be active agents? To take some specific examples, we may need to raise this question in the concrete context of the provision of nourishment, clothes, housing, health, social interaction from a position of adequate self-esteem, etc. The key point is to see the individual as

a member of a social network, especially at the local level.

I have also argued^{4/} that in order for freedom as capability to be actual freedom we need a set of rights to be recognized. These must include the basic rights such as security, subsistence, participation and physical movement but may well need to go beyond a list of basic rights.

Recognition of rights is a necessary first step, but a moment's reflection will convince anyone that this is not sufficient for human development, in particular, at the local level. Without resources, rights are simply formal and abstract constructions. Without a concrete informational base about local and regional conditions and an institutional plan of actions, resources cannot be matched with needs. Thus we need a specific way of capturing the relevant information and a set of effective organizations. In what follows I only present an outline of these two areas. The interested reader may follow up by consulting some of the sources in the reference section.

III. REGIONAL AND LOCAL DEVELOPMENT: INFORMATION AND ORGANIZATION

Yogo, Ohama and Kumssa^{5/} present local development as an interaction among households, state, market and local community. They distinguish between an internal system of local community and households and the external system. Their insight that sustainable development organizations must evolve from the internal systems is crucial in understanding the role and nature of development organizations in local development.

Consistent with this perspective is what I will call the Regional/Local Social Accounting Approach (RLSA). The RLSA approach tries to bring together household, productive activities, distribution, consumption, saving and economic interaction with the external system under a unified framework. Although it overlaps with the approach described by Yogo et al., it is also complementary to their approach in that the economic information is organized in a systematic

fashion to complement their mainly social approach. Together the two approaches can lead to a holistic socio-economic approach that will also be rigorous both qualitatively and quantitatively.

In order to offer a broad view of RLSA (and the Local Social Accounting Matrix--RSAM when these can be built) let us begin with a bird's eye view of the development process. In Figure 1, the interaction between the local and non-local aspects of development are described schematically. Notice the two-way interaction and feedback loop at the implementation stage that must exist for development organizations to play a meaningful role.

Figure 2 extends the perspective offered in figure 1 by identifying three levels of development as well as overall functions of the necessary information. If we focus on the local level in particular, the identification of local development plans and projects becomes crucial. What is not apparent from the schematics is the key requirement of creation of local social capabilities. It must be the focus of and a major motive force in local development efforts.

The transition from description of data and development to the analysis of data requires social, political and economic analysis. Here, I will address the socio-economic component of the analytical tasks. Identification of households by their socio-economic characteristics is the first step in this process. An RSAM in particular starts with the households and their transactions leading systematically and inexorably into an intricate network of relationships between the households and the outside world. Tables 1 and 2 show how the flows between the household and the other entities can be arranged in a matrix form. Table 1 captures these flows at the national level for Kenya. Instead of a nation as a whole we can look at a sub-national unit in order to build an RSAM. For example, we can look at a city or a village. With such disaggregation we can build up from the bottom a Local Social Accounting Matrix.

(Figure 1 about here)

(Figure 2 about here)

In Table 2, we can see the modular composition of a SAM. For an RSAM some of the modules will be close to zero. Others such as the income generation module will be quite significant. An advantage of RSAMs as contrasted with national SAMs is that the former need only incorporate the details relevant for local development. Therefore, at the local and regional level RSAMs need not be built in complete detail as long as a number of tasks related to the households' resources and capabilities are accomplished. These range from the classification to enumeration of resources. More specifically, one needs to classify households by socio-economic characteristics in order to understand the income generation process by which the households receive their incomes. Furthermore, one also must pinpoint the actual distributional mechanisms and understand the household consumption patterns. One also needs to estimate the resource generating capacity and resource absorbing capacity of the households. Finally and most importantly, one must link household income and consumption to social capabilities and functionings. These can be accomplished without having to complete a SAM in every detail.

(Table 1 about here)

(Table 2 about here)

If items 1-6 can be investigated systematically by combining economic and social modes of inquiry, intervention at the local level may be much more effective than it has been historically. For example, the RSAM information base will help the field-worker to understand the interrelations between households categories such as "restricted," "attached" and "distanced"^{6/}.

The role of the state and the market can also be neatly summarized in the transactions reported in RSAM. However, information regarding prices and their variations, types and quantities of goods, and market structure (e.g., monopoly, oligopoly or competition), need to be

provided along with the RSAM. Another important aspect not captured by RSAM alone is “the accessibility of the channels to the national or international markets”^{7/}. This is another reason why the two approaches are best thought of as being complementary.^{8/}

IV. CONCLUSION: LOCAL INVESTMENT, CAPABILITIES ENHANCEMENT AND A DEVELOPMENTAL APPROACH TO POVERTY REDUCTION

The importance of investment in local and regional development has been underlined by many studies. However, a comprehensive framework for linking the local, national and international levels of analysis is often absent. With globalization sweeping the world, the local economies are also being transformed rapidly in many parts of the world. Hence, the need for such a framework is even more apparent today than before.

We understand today that even though local Development involves primarily the local households and communities, it is connected in important ways to the national and international community.

With the increase in trade, this already became clear by the mid-eighties. What is an even stronger force transforming remote regions of the world is the increase in Foreign Direct Investment. Globalization of trade and investment can be captured in the RSAMs in a much more detailed way by using both national and international data sources.

It follows, therefore, that local and regional case studies within a global setting utilizing the RSAM approach will lead to a relatively more comprehensive understanding of the needs and capabilities of local and regional communities in the developing economies.

It is equally important to emphasize that one practical end of all this is to train competent development workers at the local level. Without such training and transfer of capability, all theories will simply remain unutilized (or worse, unusable) intellectual constructs.

The most important policy message of the present methodological approach is that it is

possible to operationalize Sen's capabilities approach at the micro-level while maintaining the micro-macro linkage by following the RSAM formalization of the economy according to the formal approach outlined here. Properly trained local fieldworkers can then play a vital role in optimally using the investible resources at the local level and resources flowing from outside. Not only can the poverty reduction goal be achieved more effectively by following this approach, the capabilities enhancement of all households that is suggested here will lead to an increase in overall productivity as well. Thus the approach outlined here when used for poverty reduction policy assessment and implementation can be called a "developmental poverty reduction approach". Formal models built for this purpose with an eye towards the local characteristics can be useful (Khan 2003b).

NOTES

- 1/ In the text, generally, the geographical encompassing criterion is used to distinguish among the categories international, national, regional and local. Then, local is geographically encompassed by “regional.” However, in some instances they can be used interchangeably.
- 2/ A. K., Sen, *Inequality Re-examined* (Harvard University Press, 1992). See also Sen (1999,1976)
- 3/ see Khan (1998) in particular.
- 4/ H. A. Khan, “Markets, Democracy and Structural Adjustment,” Relaciones Internacionales, September, 1993. see also Lipton and Ravallion (1995), Adelman, and Robinson, (1989), *Aghion, Caroli, and Garcia-Penalosa (1999)*, *Akyuz and Gore (2001)*, *Foster, Greer and Thorbecke (1984)*, *Hulme and Shepherd (2003)*, *Jalan and Ravallion(1998a and b)*, *Kanbur (1999,1987)*, *Kakwani(1993)*, and *Quibria(2002)*.
- 5/ T. Yogo, Y. Ohama and A. Kumssa, “Analysis of Local Social Systems in Development,” unpublished paper (UNCRD, 1994).
- 6/ *ibid.*, p. 9.
- 7/ *ibid.*, p. 12.
- 8/ In addition to being information bases, RSAMs can also be used for modelling various local and regional policy experiments. For some examples, please see H. A. Khan and E. Thorbecke, *Diffusion of Alternative Technologies in a SAM Framework*, (Aldershott, U.K.: Gower Publishing Co., 1988); and J. Jeffrey and H. A. Khan, “The Employment Effects of Income Redistribution,” *World Development* (March 1993).
- 9/ H. A. Khan and E. Thorbecke, *Diffusion of Alternative Technologies in a SAM Framework*, (Aldershott, U.K.: Gower Publishing Co., 1988).See also Khan(2003; 2002a,b,c; 1999; 1998;1997a,b,c; 1996; 1994;1993) and also *Azis(2002)*, *Bourguignon (2002)*, *De Janvry and Sadoulet (2000)*.

**FIGURE 1:
DATA REQUIREMENTS FOR REGIONAL LOCAL DEVELOPMENT BY FUNCTION**

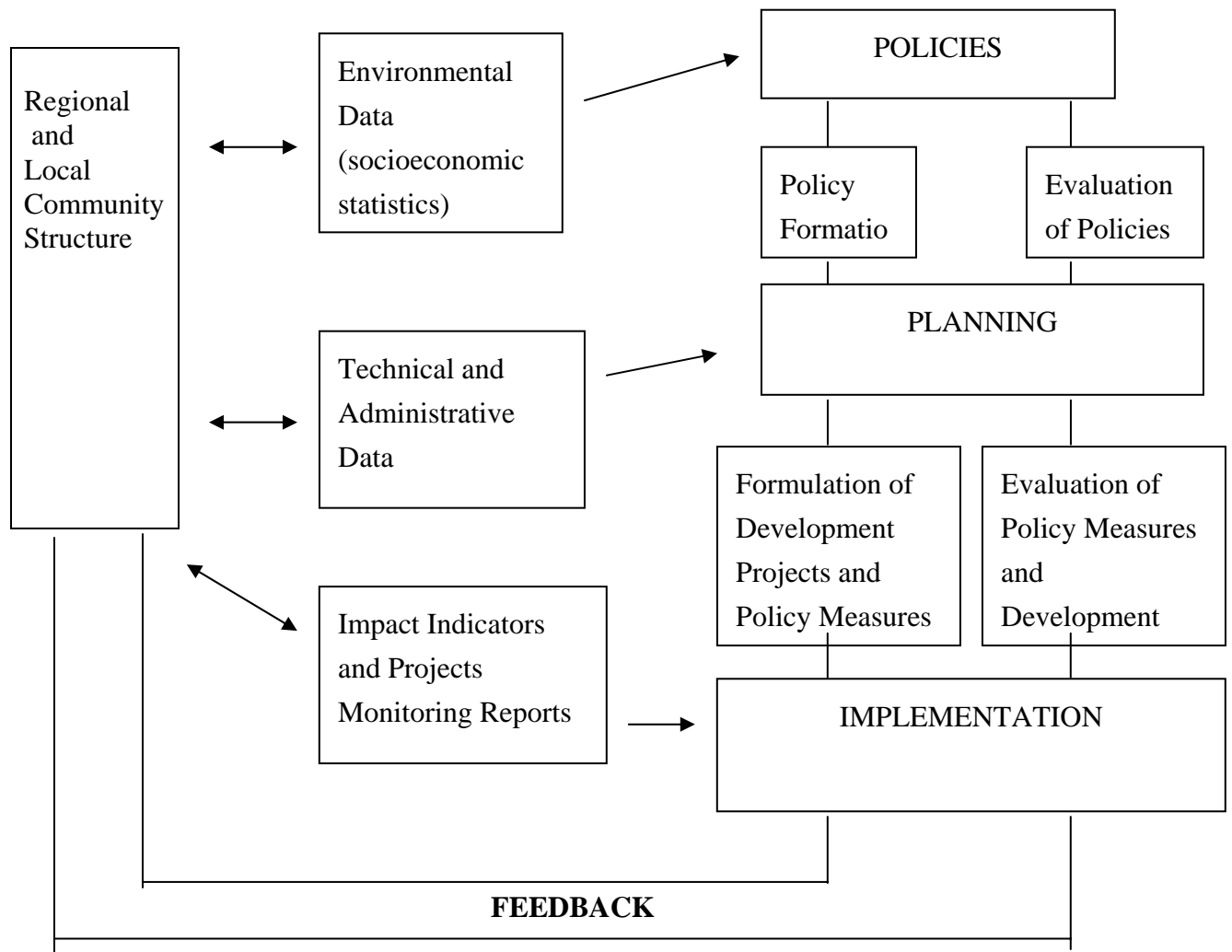


FIGURE 2: DEVELOPMENT - INFORMATION MATRIX

	POLICY FUNCTION	PLANNING FUNCTION	IMPLEMENTATION	OVERALL LEVEL
NATIONAL LEVEL	macro-policy outlines	macro-development plan	legislation and administrative activities	MACRO LEVEL
LOCAL/ REGIONAL LEVEL		local development plan and project identification	project design, coordination and administration	DE-CENTRALIZED LEVEL
PROJECT LEVEL			project implementation	SITE LEVEL
OVERALL FUNCTION	DEFINITION OF OBJECTIVES	FORMULATION OF MEASURE & PROJECTS	IMPLEMENTATION OF MEASURES & PROJECTS	

TABLE 1. SAM-FORMAT OF SNA-AGGREGATES, KENYA, 1982

(in KE million pounds)

	FACTORS OF PRODUCTION	INSTITUTIONS	PRODUCTION ACTIVITIES	CAPITAL ACCOUNT	INDIRECT TAXES	REST OF THE WORLD (NET)	TOTAL
FACTORS OF PRODUCTION			G.D.P. at factor cost (2931.87)			Net Factor Income from Abroad (-133.80)	Domestic Factor Income (2798.07)
INSTITUTIONS	G.D.P. at factor cost (2798.07)				Net Indirect Taxes (467.59)	Net Non-Factor Income from Abroad (38.80)	Disposable National Income (3304.46)
PRODUCTION ACTIVITIES		Total Final Consumption (2793.15)		Gross Investments (764.71)		Trade Balance (158.40)	Net Final Demand (3399.46)
CAPITAL ACCOUNT		Domestic Savings (511.31)				Balance of Payments Deficits (253.40)	Total Savings (764.71)
INDIRECT TAXES			Net Indirect Taxes (467.59)				Net Indirect Taxes (467.59)
TOTAL	Domestic Factor Income (2798.07)	Total Expenditure at Market pr. (3304.46)	G.D.P. at market prices (3399.46)	Total Gross Investments (764.71)	Net Indirect Taxes (467.59)	----- -----	

TABLE 2. MODULAR COMPOSITION OF THE SAM

	FACTORS OF PRODUCTION	INSTITUTIONS	PRODUCTION ACTIVITIES	CAPITAL ACCOUNT	INDIRECT TAXES	REST OF THE WORLD	TOTAL
FACTORS OF PRODUCTION			Income Generation Module			Factor Income Received from Abroad	Total Factor Income Received
INSTITUTIONS	Income Distribution Module	Income Redistribution Module			Total Net Indirect Taxes	Transfers Received from Abroad	Total Disposable National Income
PRODUCTION ACTIVITIES		Domestic Consumption Module	Industrial Transactions Module	Domestic Investment Module		Exports	Total Demand
CAPITAL ACCOUNT		Domestic Savings Module				Balance of Payments Deficits	Total Savings
INDIRECT TAXES		Indirect Taxes on Final Consumption	Indirect Taxes on Intermediate Consumption	Indirect Taxes on Investment Goods			Total Net Indirect Taxes
REST OF THE WORLD	Factor Income Paid Abroad	Imports of Final Consumer Goods	Imports of Intermediate Consumer Goods	Imports Investment Goods			Total Payments Abroad
TOTAL	Total Factor Income Paid	Total Expenditure of the Institutions	Total Supply	Total Gross Investments	Total Net Indirect Taxes	Total Receipts from Abroad	

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Technical Appendix

Suppose there are n regions indexed by $i = 1, 2, \dots, n$. For each region i , there are intra-regional transactions as well as inter-regional transactions. Then, the national SAM can be disaggregated into n RSAMs. The typical RSAM for region i can be schematically described as in Table 1. Table 2 divides up the regional accounts according to whether these are endogenous or exogenous for the purpose of modeling.

TABLE 1. SIMPLIFIED SCHEMATIC SOCIAL ACCOUNTING MATRIX

				Expenditures				
				Endogenous accounts			Exogenous	Totals
				Factors	Households	Technology production activities	Sum of other accounts	
				1	2	3	4	
R e c e i p t s	E n d o g e n o u s	Factors	1	0	0	$T_{1,3}$	x_1	y_1
		Households	2	$T_{2,1}$	$T_{2,2}$	0	x_2	y_2
		Production Activities	3	0	$T_{3,2}$	$T_{3,3}$	x_3	y_3
		Sum. of other accounts	4	1^1_1	1^1_2	1^1_3	t	y_x
		Totals	5	y^1_1	y^1_2	y^1_3	y^1_x	

As is elaborated further in Khan and Thorbecke^{11/}, the SAM framework can be used to depict a set of linear relationships in a fixed coefficient model. For deciding the question of determination, the accounts need to be divided into exogenous and endogenous ones.

TABLE 2.
SCHEMATIC REPRESENTATION OF ENDOGENOUS AND EXOGENOUS
ACCOUNTS IN A SAM

		Expenditures				Totals
		Endogenous	Sum	Exogenous	Sum	
Receipts	Endogenous	T_{nn}	N	Injections T_{nx}	x	y_n
	Exogenous	Leakages T_{xn}	1	Residual Balances T_{xx}	t	y_x
Totals		y_n'		y_x'		

Source: H.A. Khan and E. Thorbecke, *Macroeconomic Effects and Diffusion of Alternative Technologies Within a Social Accounting Matrix* (Aldershot, U.K.,: Gower Publishing Co., 1988).

Source: H. A. Khan and E. Thornbecke, *Choice and Diffusion of Technology in a Macroeconomic (SAM) Framework*.

Looking at Table 1, which represents a SAM, we can see immediately that

$$y = n + x \quad (1)$$

$$y = I + t \quad (2)$$

Now if we divide the entries in the matrix T_{nn} by the corresponding total income (i.e. y_n), we can define a corresponding matrix of average expenditure propensities. Let us call this matrix A.

We now have:

$$y = n + x = Ay + x \quad (2.1)$$

$$y = (I - A)^{-1}x = Mx \quad (2.2)$$

m has been called the matrix of accounting multipliers by Thorbecke, for these multipliers,

when computed, can account for the results (e.g. income, consumption, etc.) obtained in the SAM without explaining the process that led to them. Let us now partition the matrix A in the following way.

$$A = \begin{matrix} & & 0 & 0 & A_{1,3} \\ A_{2,1} & A_{2,2} & 0 & & \\ & 0 & A_{3,2} & A_{3,3} & \end{matrix}$$

Given the accounts factors, household and the production activities, now we see that the income levels of these accounts (call them Y_1 , Y_2 , and Y_3 respectively) are determined as functions of the exogenous demand of all other accounts. In this respect, what we have is a reduced-form model which can be consistent with a number of structural forms. This is quite satisfactory as far as tracing the effects of a certain injection in the economy is concerned or for prediction purposes when the structural coefficients are more or less unchanged.

One limitation of the accounting multiplier matrix M as derived in equation (2.2) is that it implies unitary expenditure elasticities (the prevailing average expenditure propensities in A are assumed to apply to any incremental injection). A more realistic alternative is to specify a matrix of marginal expenditure propensities (C_n below) corresponding to the observed income and expenditure that prices remain fixed. Expressing the changes in income (dy) resulting from changes in injections (dx), one obtains,

$$\begin{aligned} dy_n &= C_n dy_n + dx \\ &= (I - C_n)^{-1} dx = M_c dx \end{aligned}$$

M_c can be termed a fixed price multiplier matrix and its advantage is that it allows any nonnegative income and expenditure elasticities to be reflected in M_c . In particular, in exploring

the macroeconomic effects of exogenous changes in the output of different product-cum-technologies on other macroeconomic variables, it would be very unrealistic to assume that consumers react to any given proportional change in their incomes by increasing expenditures on the different commodities by exactly that same proportion (i.e. assuming that the income elasticities of demand of the various socioeconomic household groups for the various commodities were all unitary). Since the expenditure (income) elasticity is equal to the ratio of the marginal expenditure propensity (MEP_i) to the average expenditure propensity (AEP_i) for any given good i , it follows that the marginal expenditure propensity can be readily obtained once the expenditure elasticity and the average expenditure propensities are known, i.e.,

$$E_{y_i} = \frac{MEP_i}{AEP_i}, \text{ where } E_{y_i} \text{ is the income elasticity for } i$$

$$MEP_i = E_{y_i} \cdot AEP_i$$

Thus, given the matrix A_{32} of average expenditure propensities, and the corresponding expenditure elasticities of demand, y_i the corresponding marginal expenditure propensities matrix C_{32} could easily be derived.